

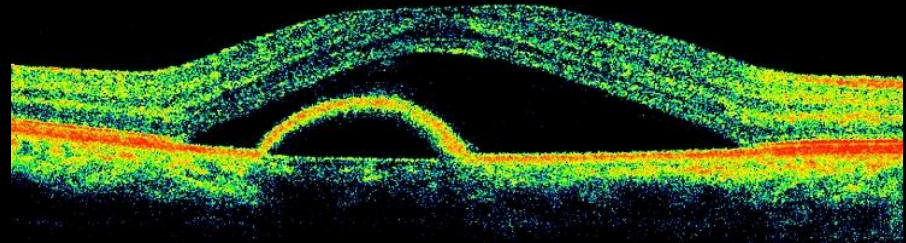


**Central Serous Chorioretinopathy (CSCR)  
The Wide Spectrum**

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Apollo Health City, Hyderabad, India**

# Central Serous Chorio-Retinopathy

Idiopathic serous detachment of neurosensory retina or RPE involving posterior pole over an area of leakage from the choriocapillaris



# Pathogenesis

Choroidal hypoperfusion, ischaemia, inflammation



Chorioapillaries hyperpermeability  
Increased hydrostatic pressure in choroid  
Increased choroidal thickness (EDI OCT)



Focal or diffuse RPE dysfunction (leak)



Neurosensory macular detachment

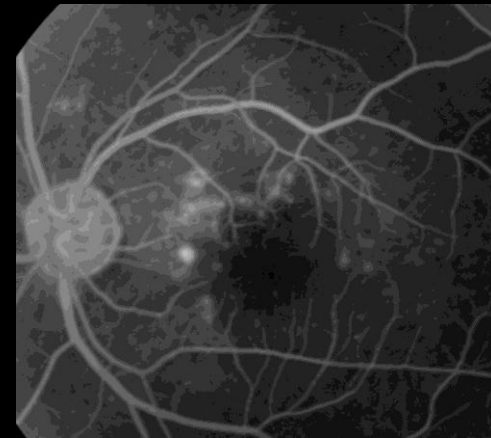


## Choroidal Thickness in Patients over age 60 with CSCR

- Michelle Liang, MD, ASRS 2014
- Both active and inactive CSC eyes had significantly greater choroidal thickness than age-matched normal eyes
- These measurements may help differentiate CSC from other causes of serous macular detachment such as neovascular AMD

## Typical CSCR

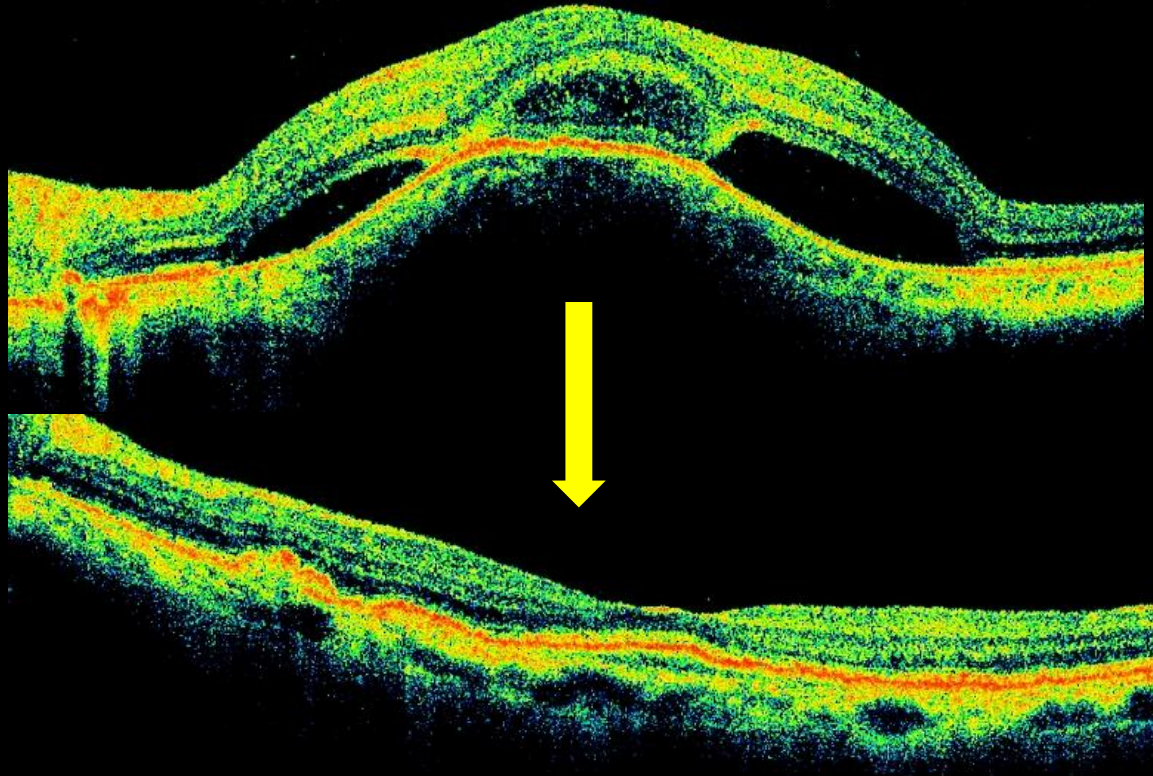
- Men : Women :: 8 : 1
- Age 20 – 50
- Resolves spontaneously in 4-8 weeks
- 1-2 focal leaks that can be treated with Laser or PDT
- Good visual prognosis
- May recur in 10-30% cases



## Typical CSCR

- 42 yo lady, c/o vision blur for 4 days
- Spontaneous resolution in 6 weeks

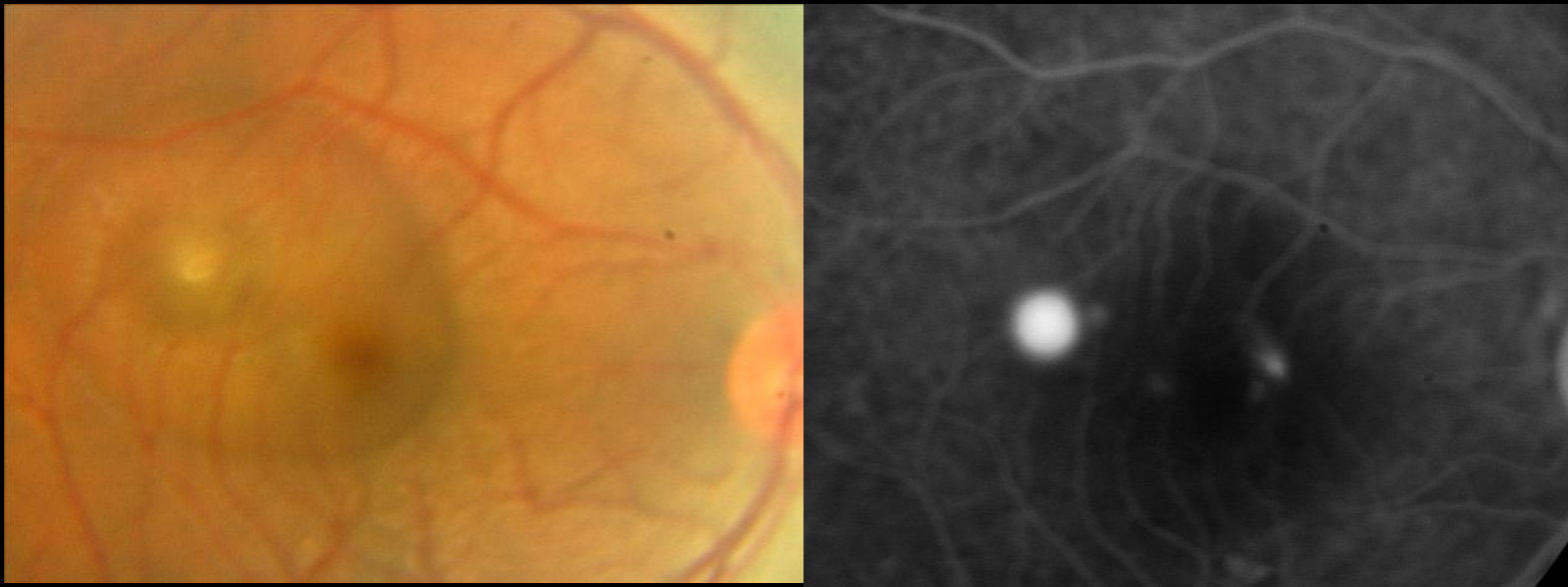
June 10  
VA 3/60



July 22  
VA 6/6

# Fluorescein angiography

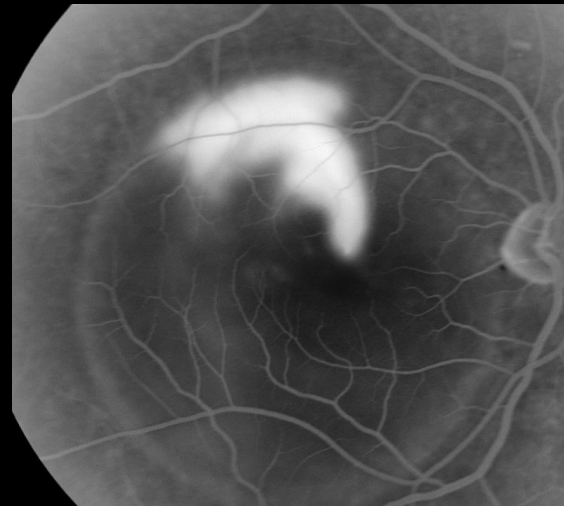
An “expanding pinpoint’ or “Ink-blot” leak  
in 60% of cases





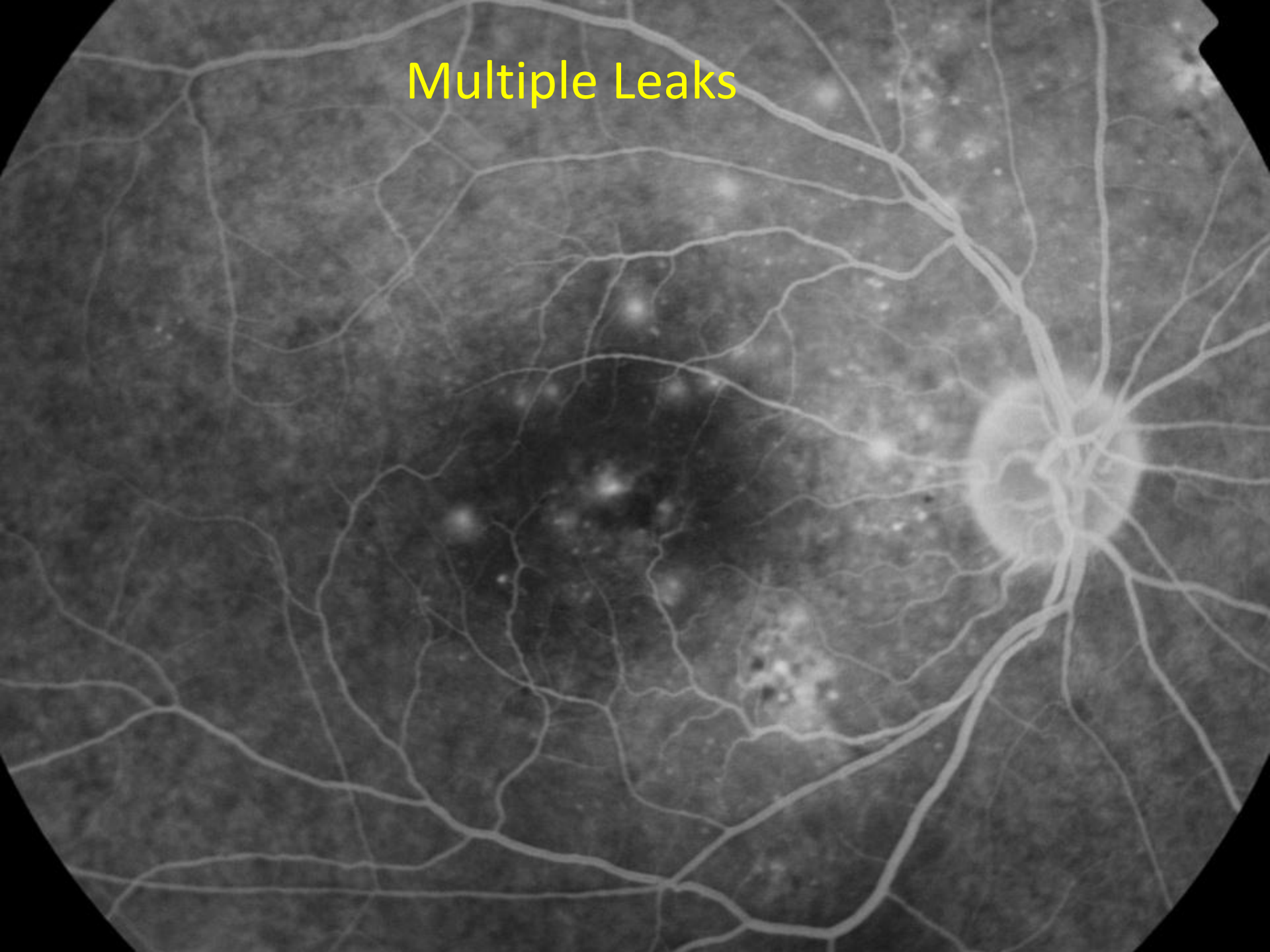
# Fluorescein angiography

- Smoke-stack or umbrella leak 20% of cases
- Temperature or osmotic pressure gradients



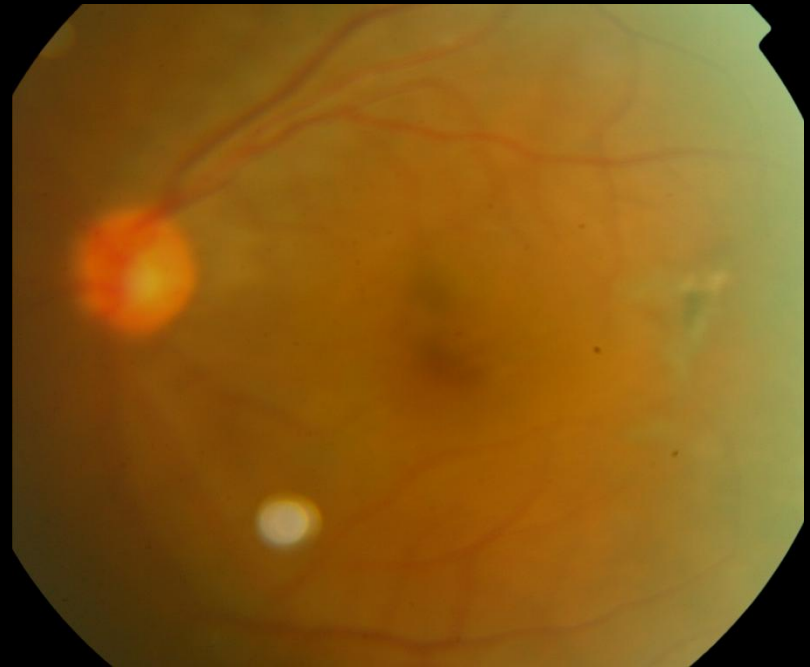
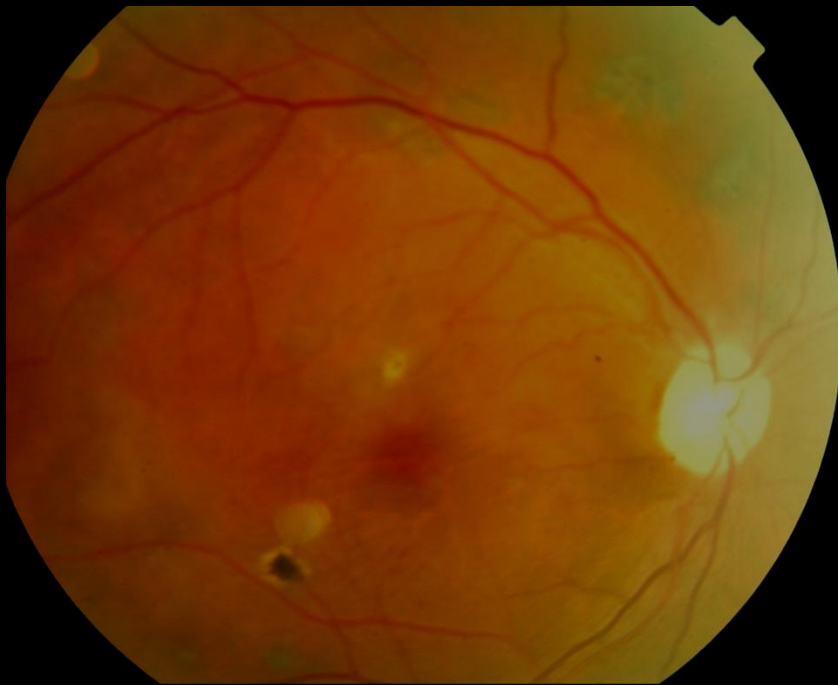


Multiple Leaks



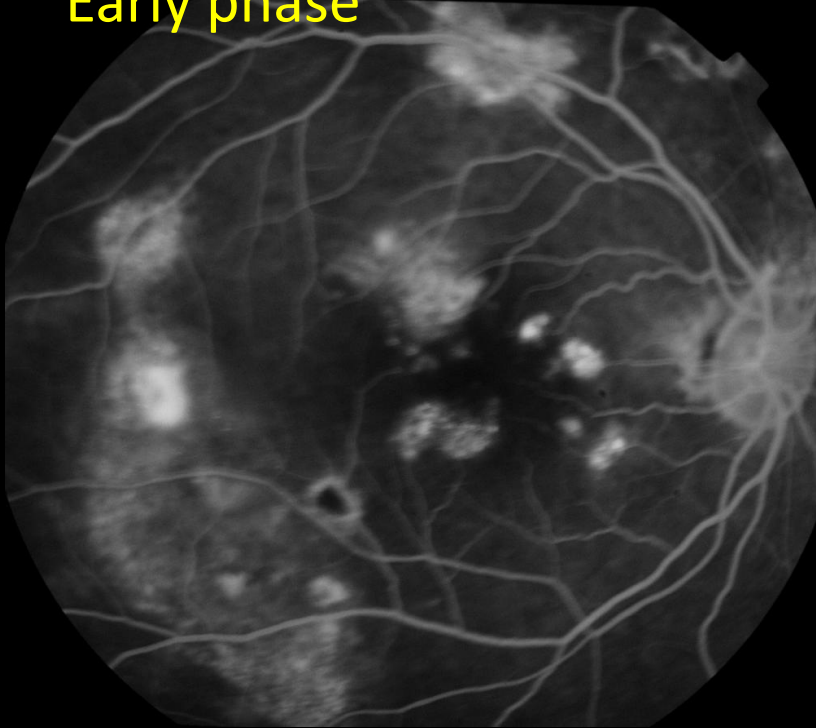
## Case.. Ms Girija

- 37 yo lady
- Bilateral recurrent CSCR
- Multiple leaks



# Fluorescein Angiogram

Early phase

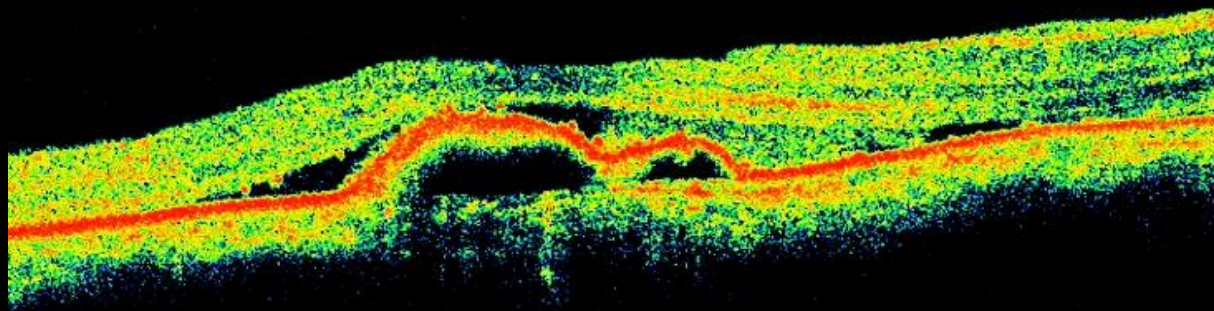


Late phase





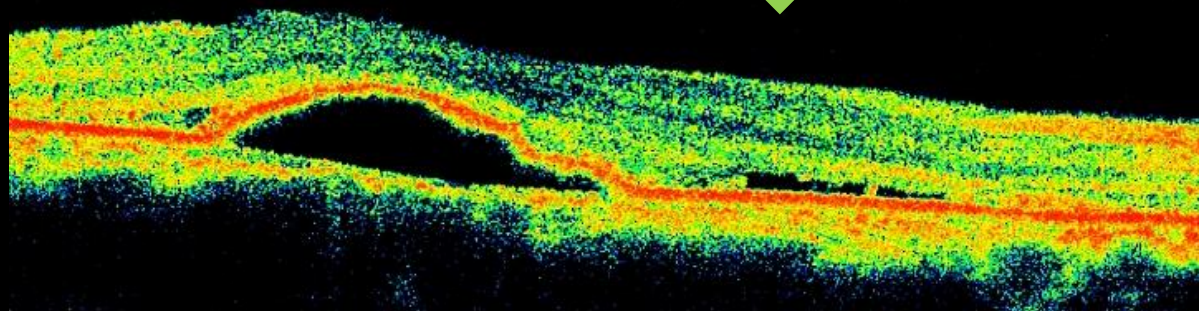
Right Eye  
Jan 2010



Observation



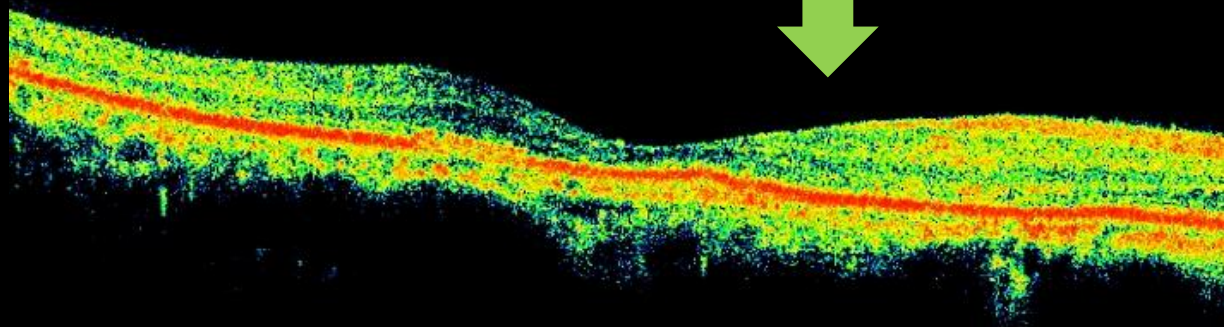
Observation  
Oct 2010



Laser

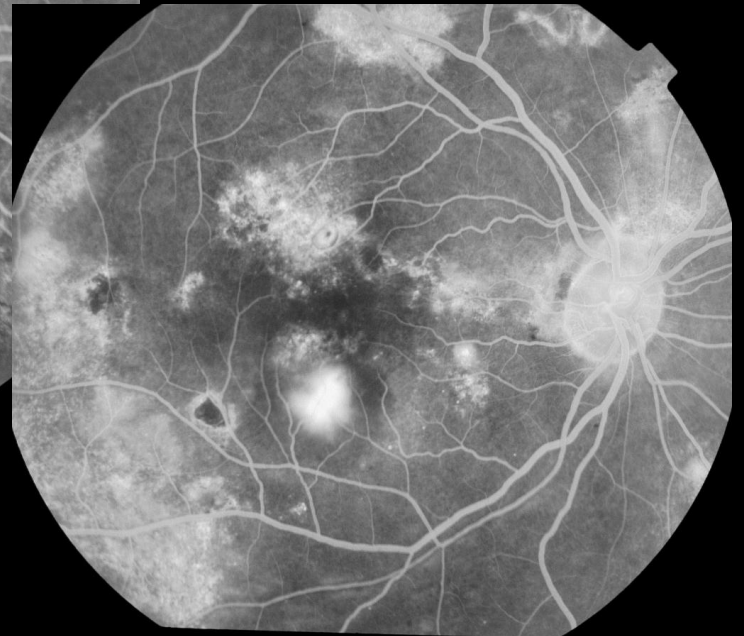
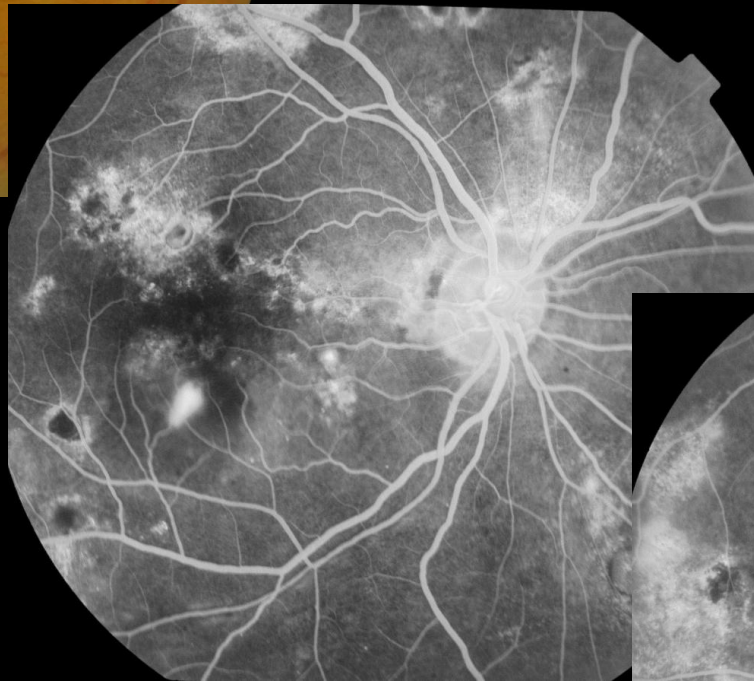
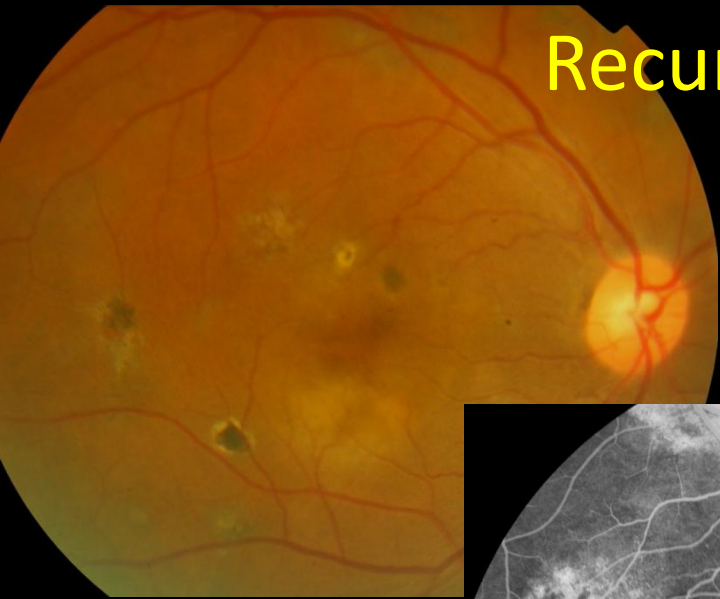


After Laser  
Dec 2010



## Recurrence after few months

- Retreated and stable thereafter



- Case. Jan 2012
- 44 yo male
- Symptoms > 8 months
- VA LE 6/18

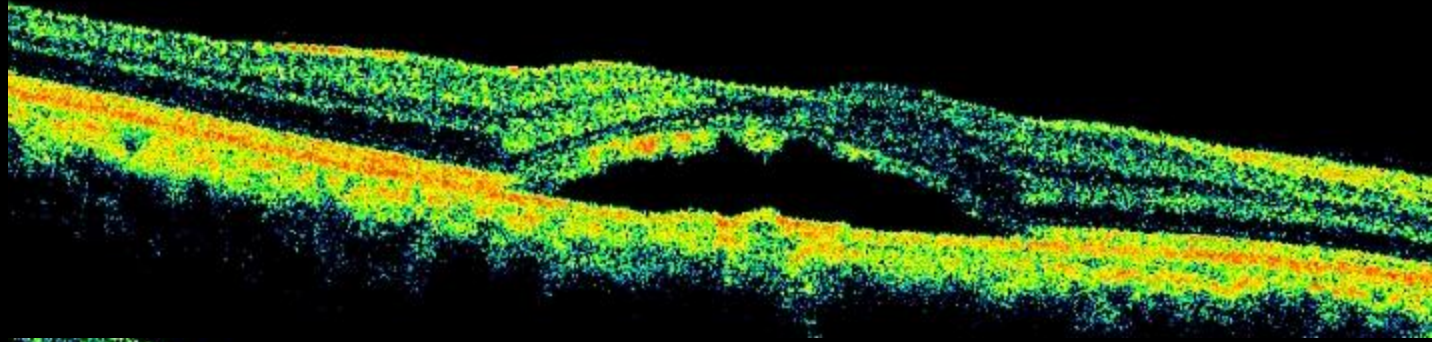




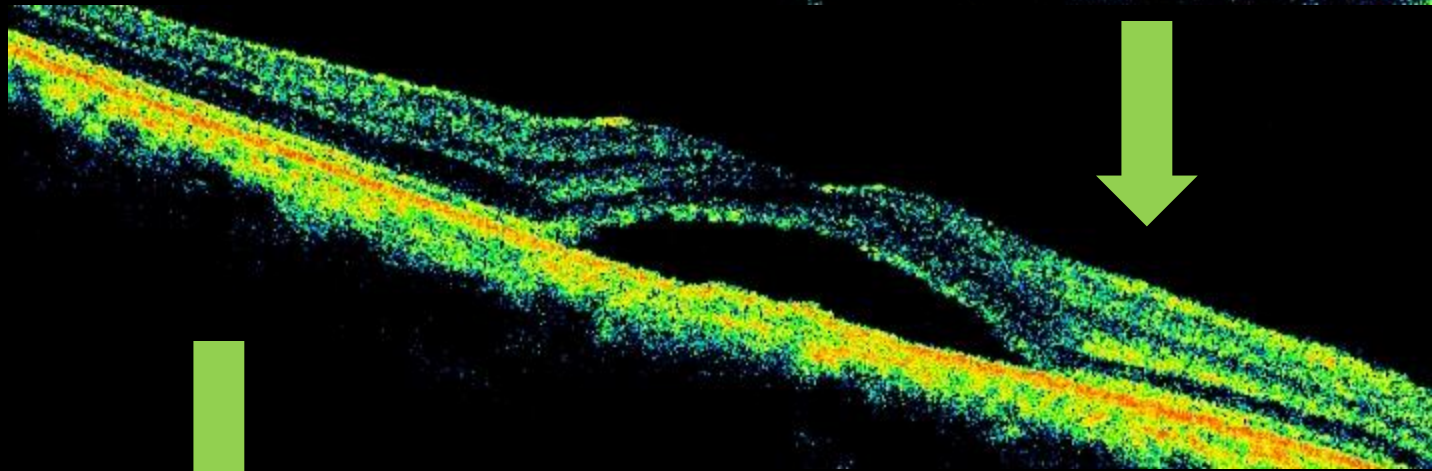


# Resolved with focal laser under LA

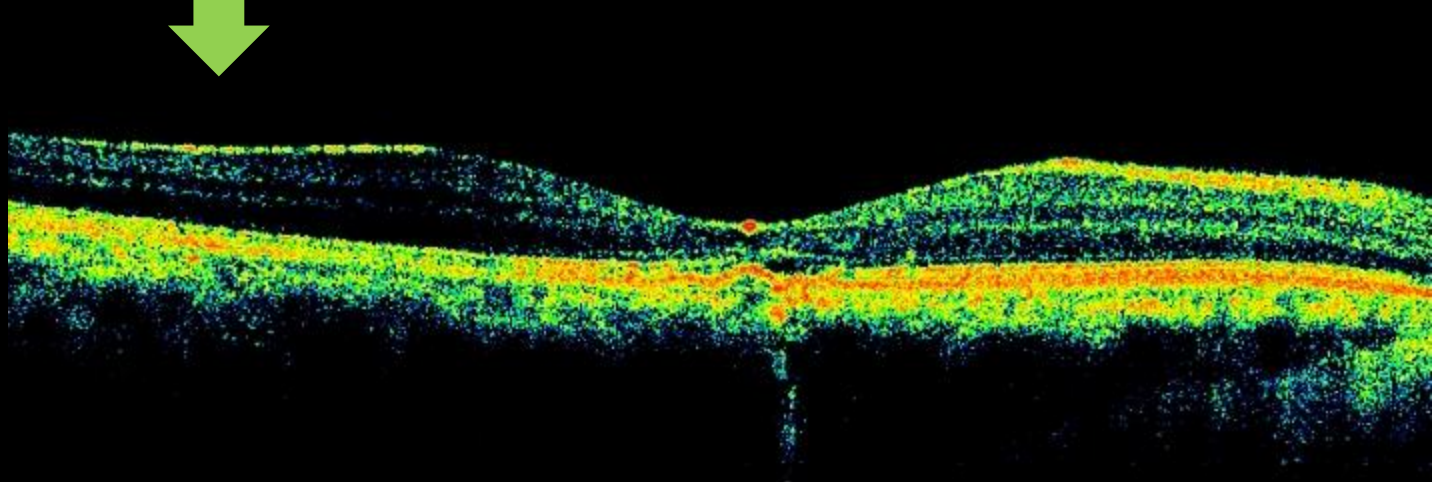
Oct 2013



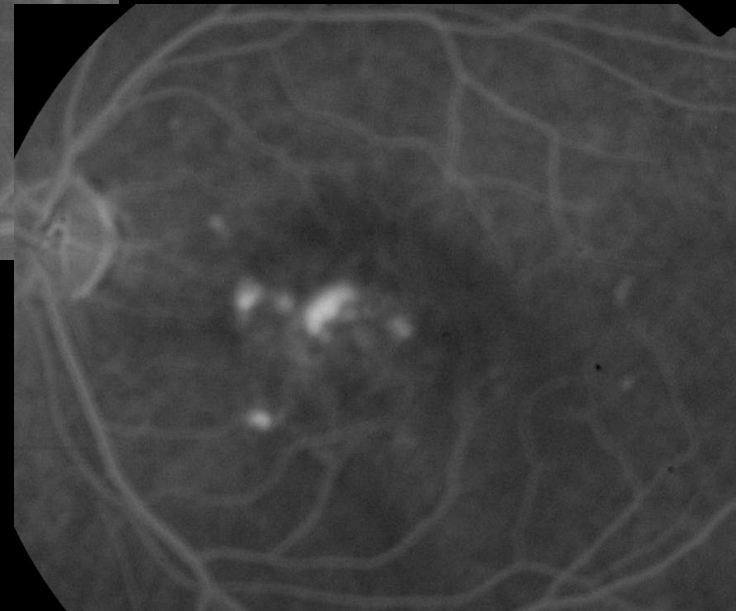
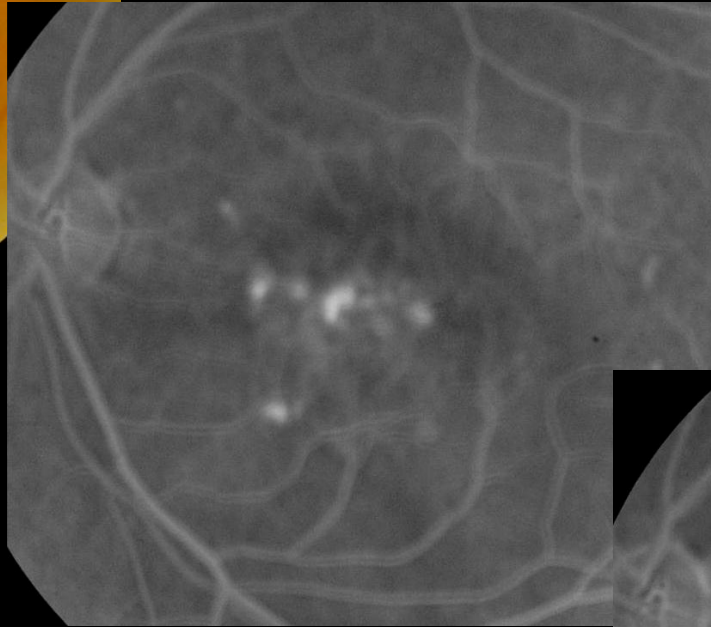
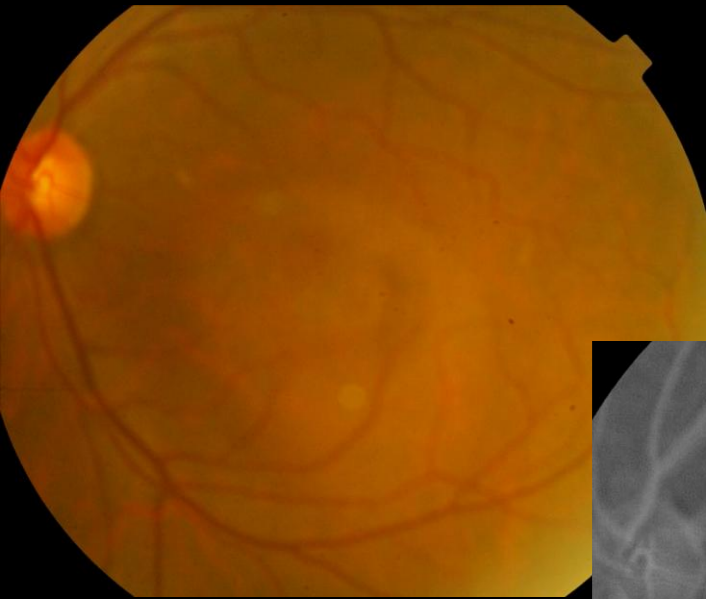
Nov 2013  
*Observation*



Jan 2014  
*After Laser*

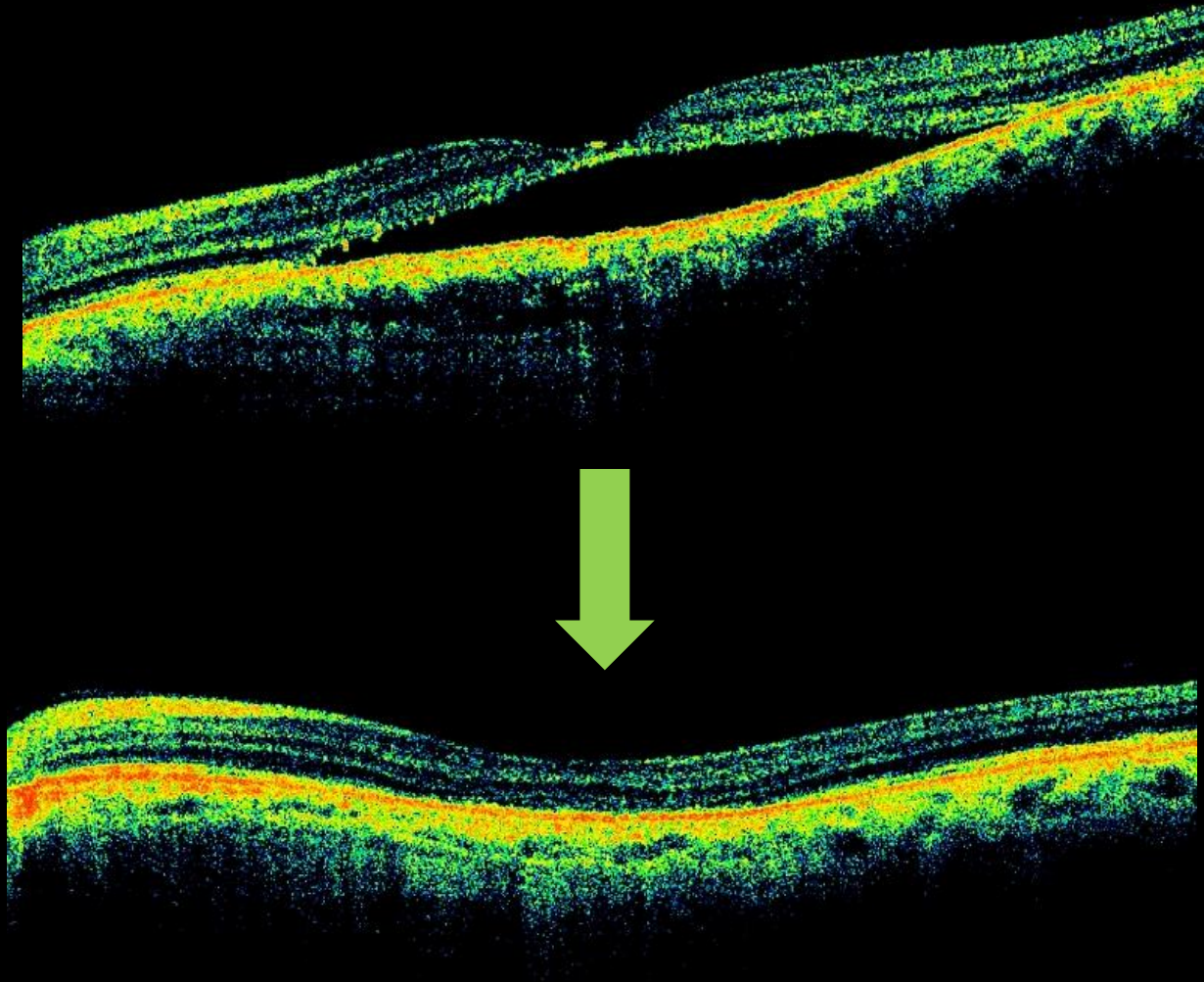


## Case...



- 61 yo male
- LE symptoms > 6 months
- VA 3/60

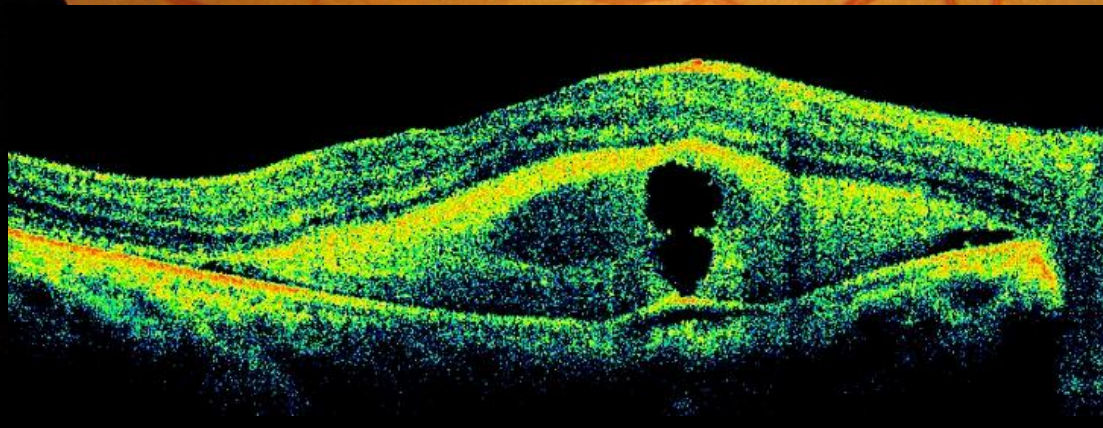
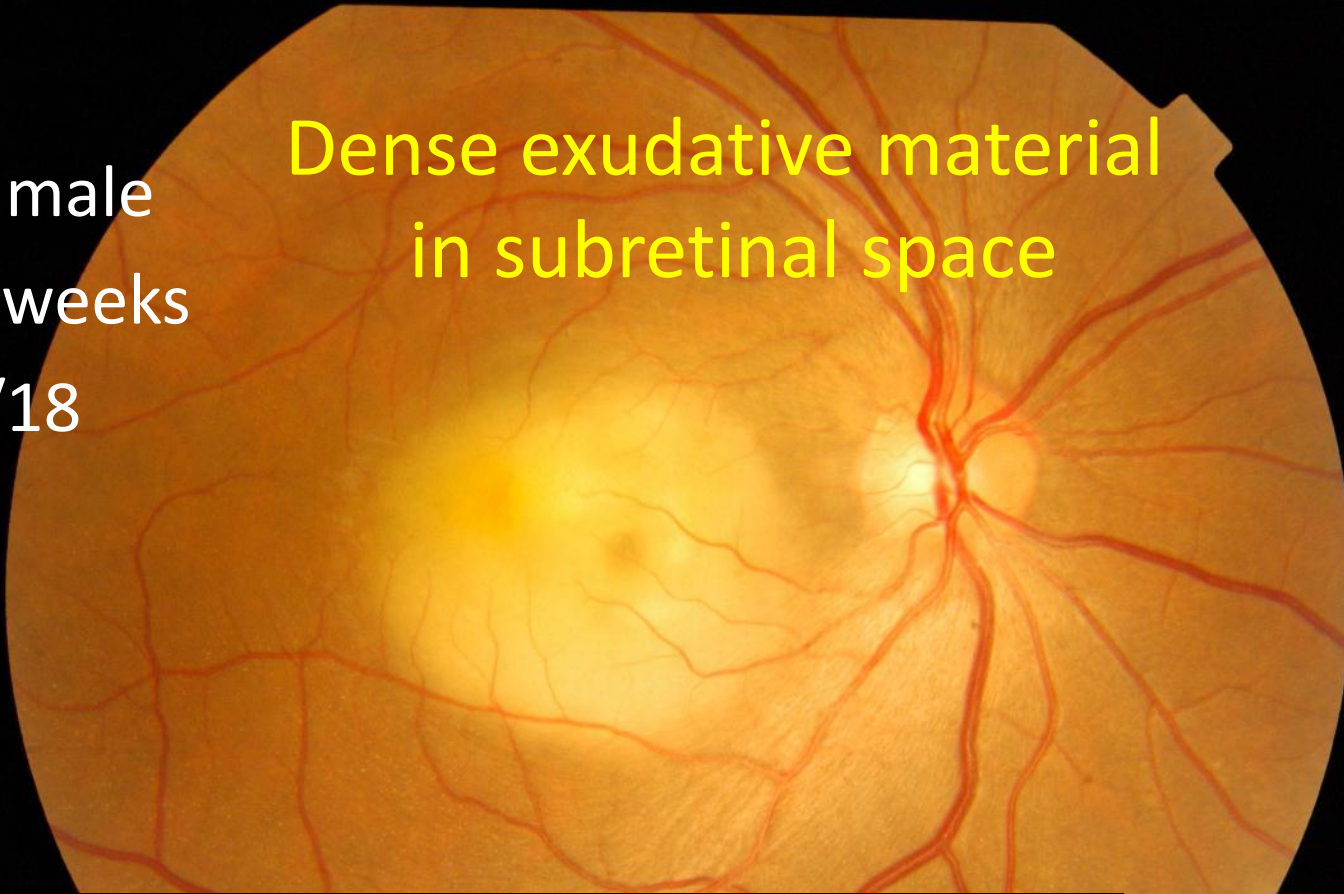
# Reduced fluence PDT



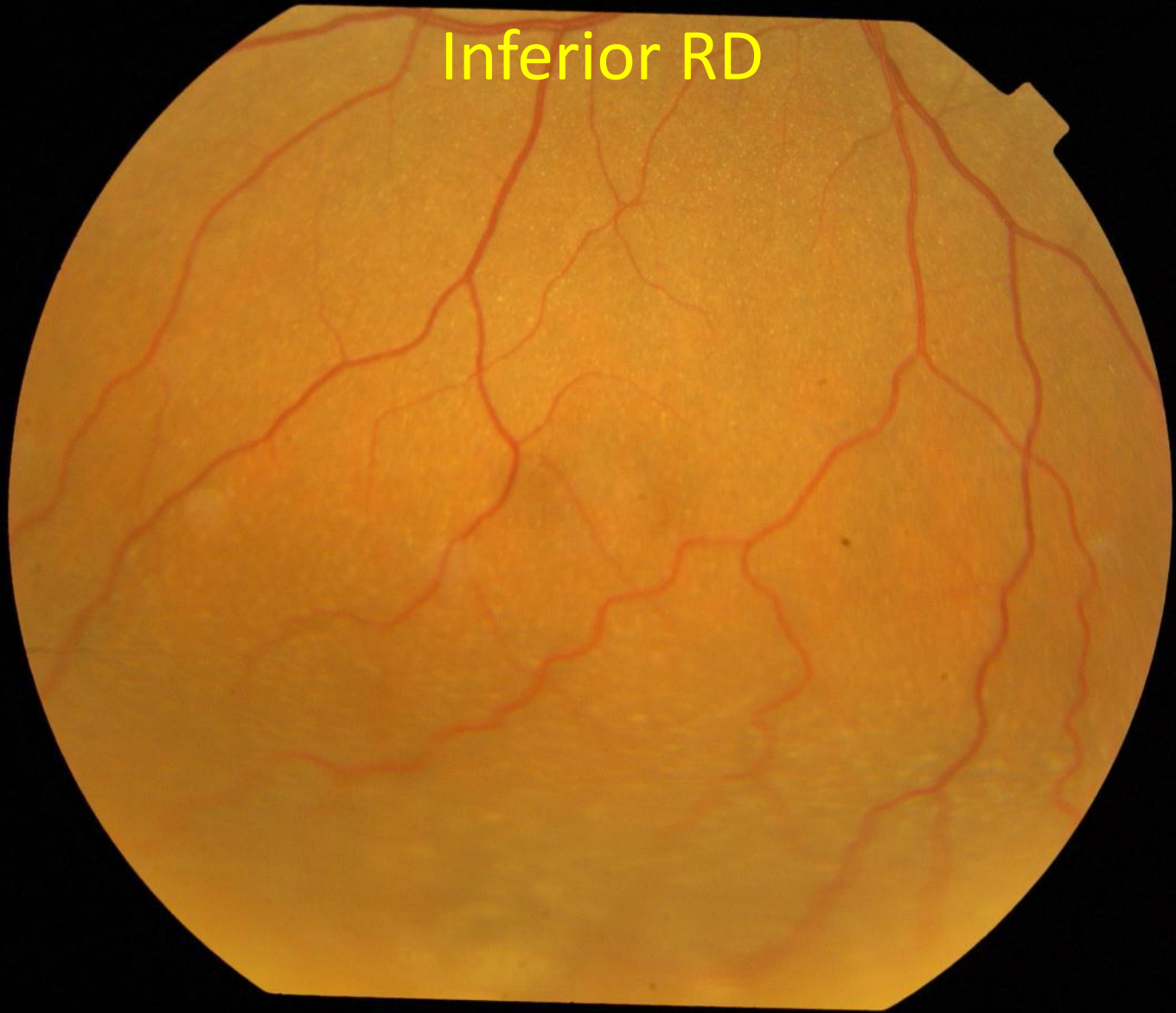


- 36 yo male
- h/o 6 weeks
- VA 6/18

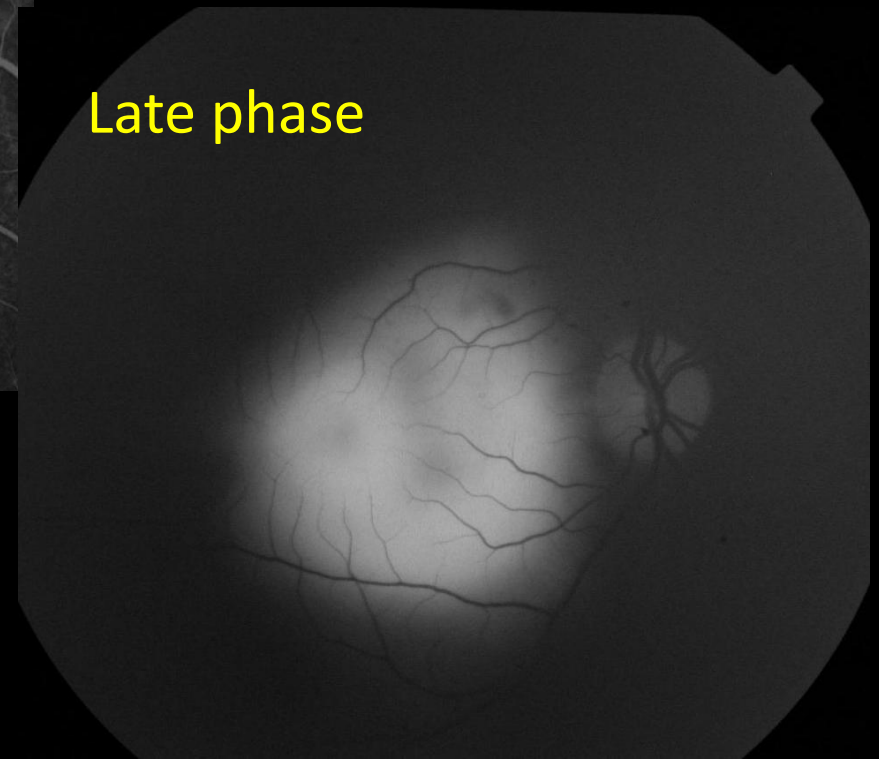
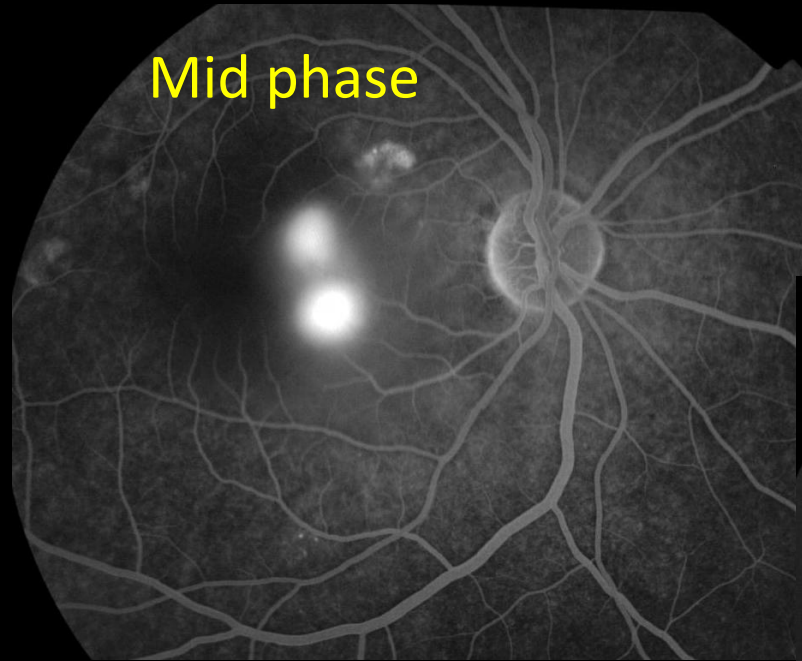
Dense exudative material  
in subretinal space



Inferior RD

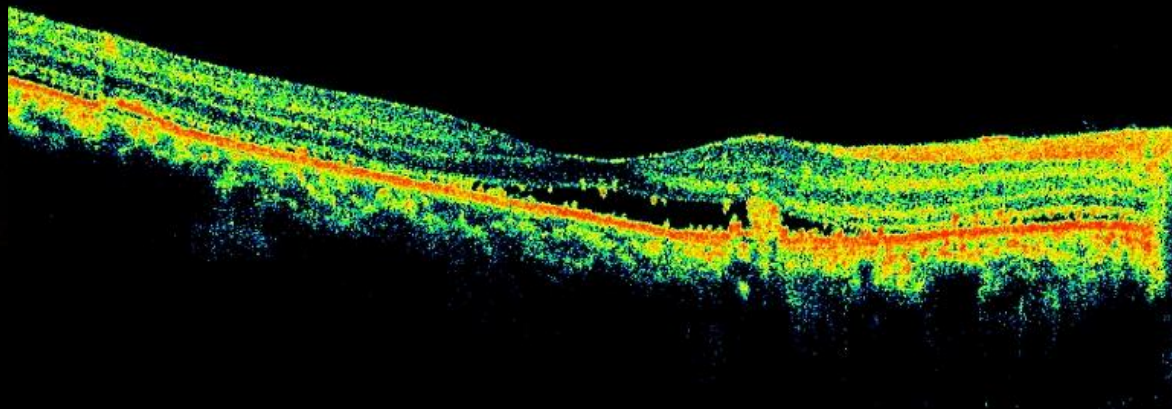


# Fluorescein angiogram





4 weeks post focal laser

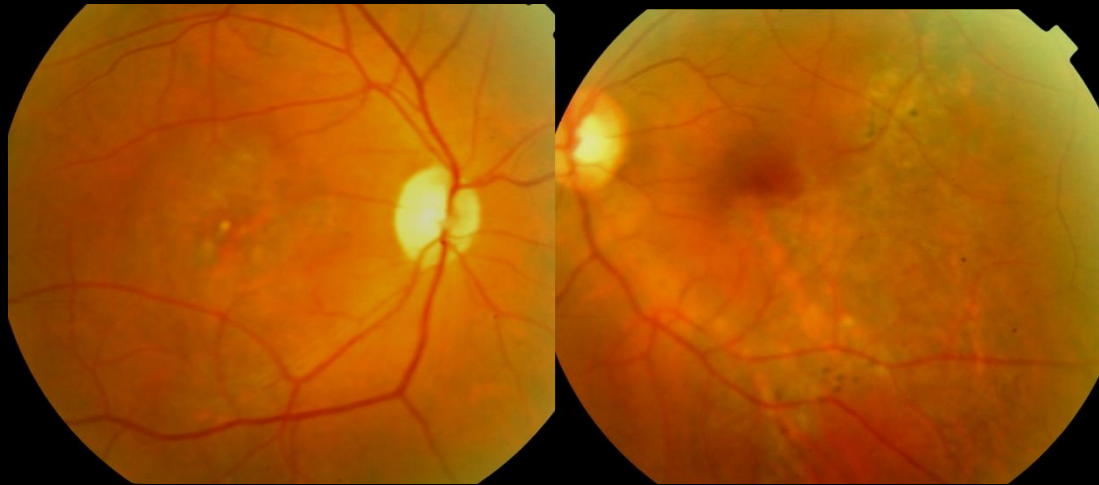




# Chronic Atypical CSCR

## Diffuse retinal pigment epitheliopathy, DRPE

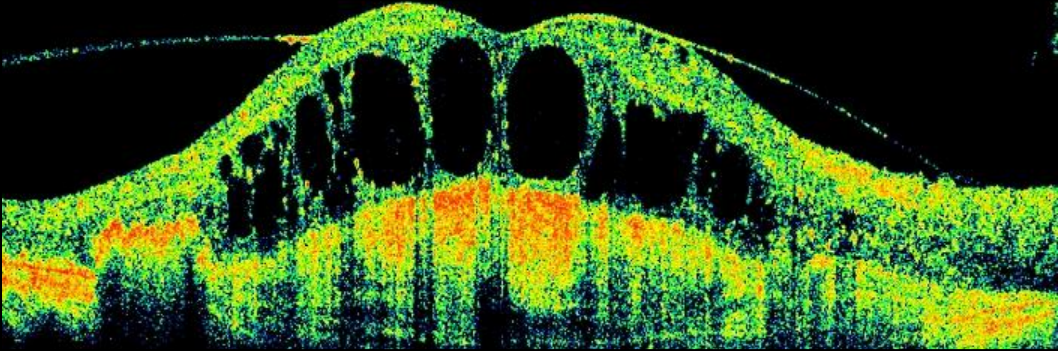
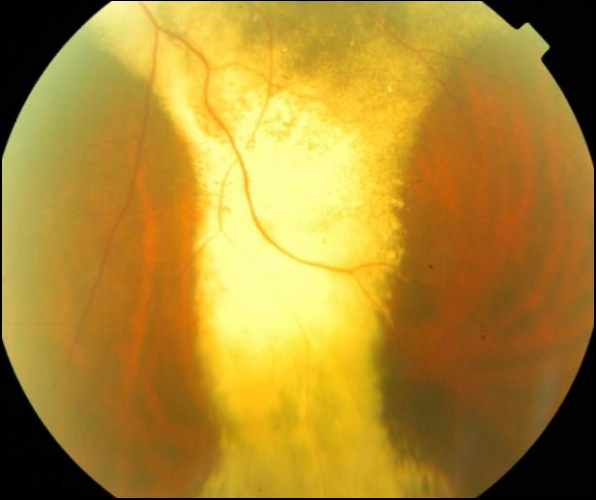
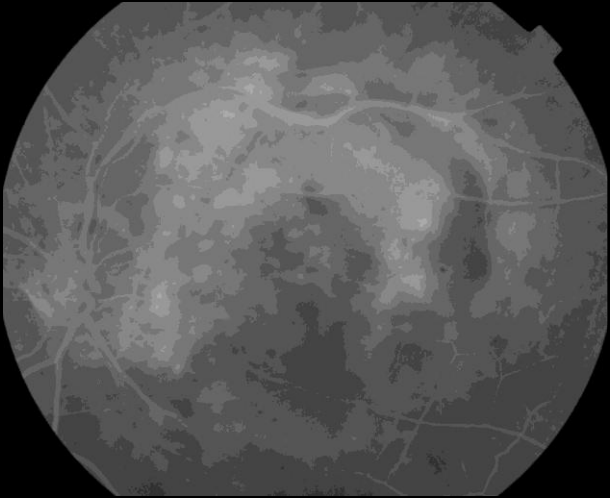
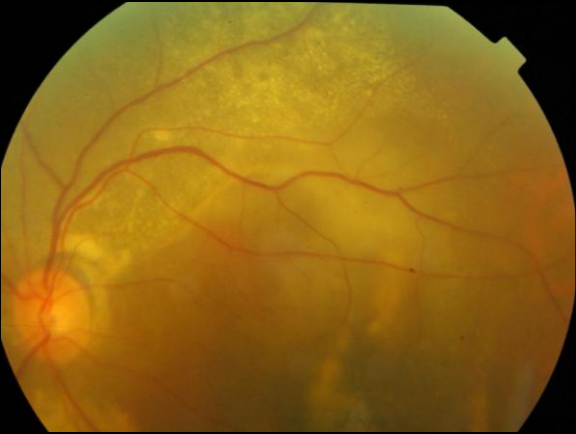
- Symptoms & signs > 6 months
- Older patients (> 55 years)
- Bilateral, Extensive, Progressive RPE atrophy
- Bullous retinal detachments



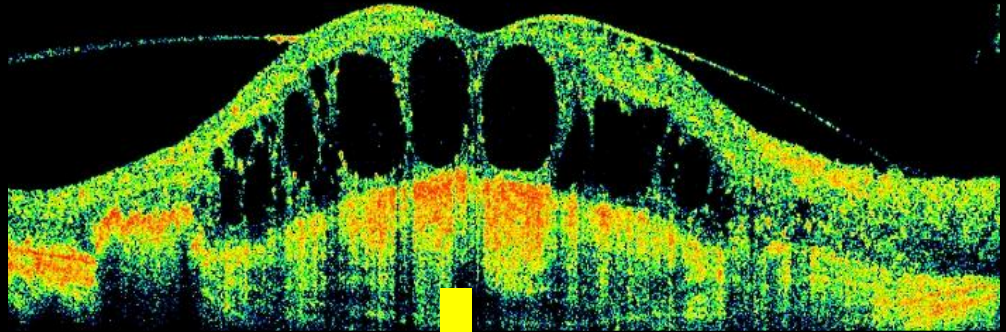
# Chronic Atypical CSCR

- Cystoid retinal degeneration, foveal atrophy
- **Worsens with steroids as cause choroidal vasodilation (puffs/ injections)**
- Can be confused with PCV, CNVM, VKH
- Poor visual prognosis
- Response to therapy suboptimal

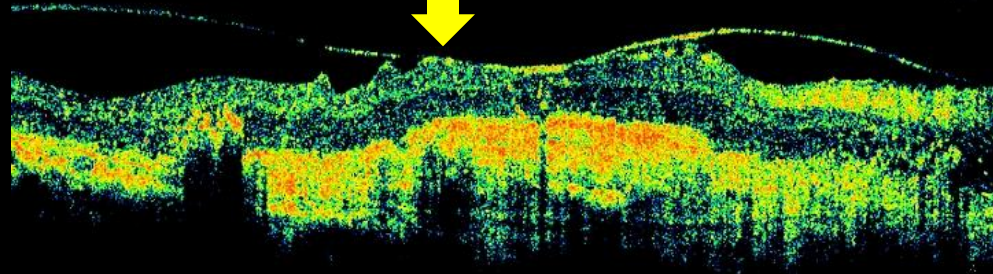
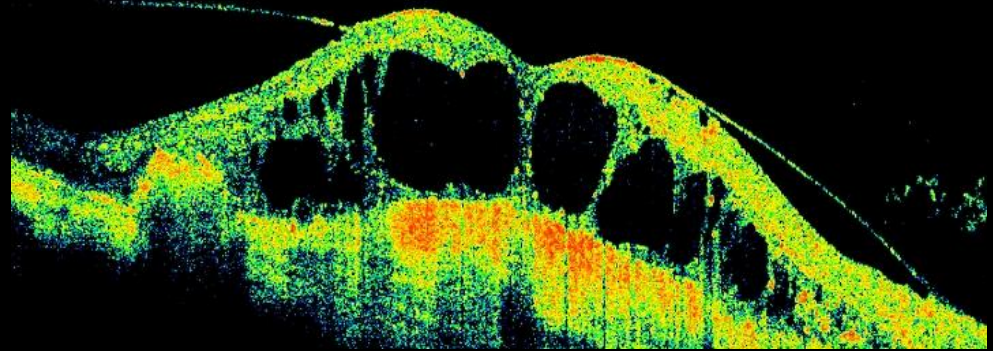
Case.. Mr KM, 72 M, Bilateral large exudative lesion, multiple widely spaced treatments with Avastin, lucentis and PDT earlier



Increasing fluid on  
bevacizumab for 6  
months



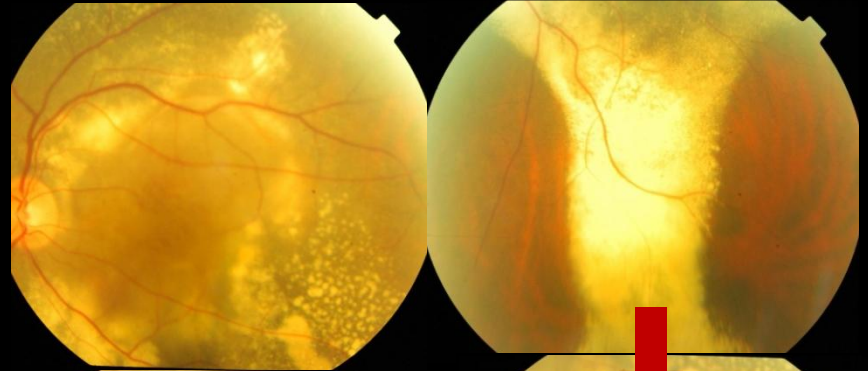
4 weeks after  
full fluence PDT



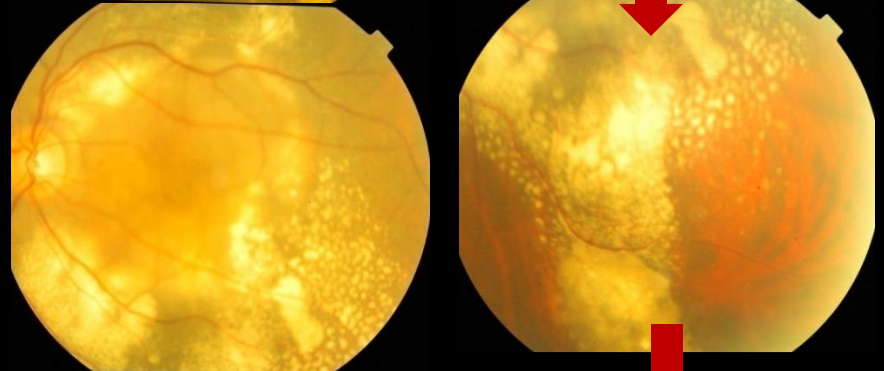


# Resolving exudates post-PDT

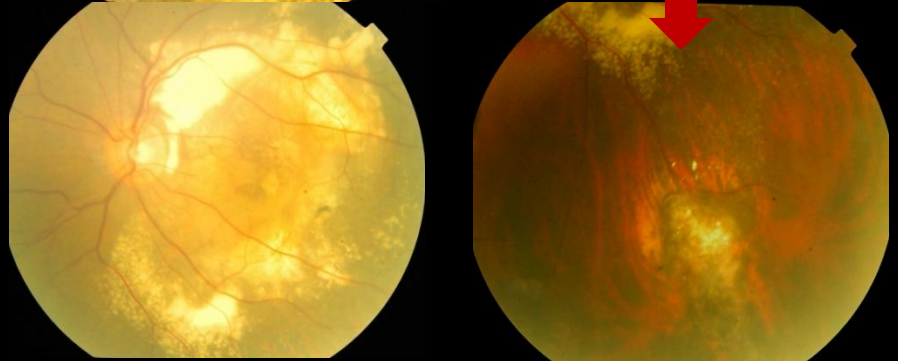
Pre-PDT 2/60



Post PDT 4 weeks

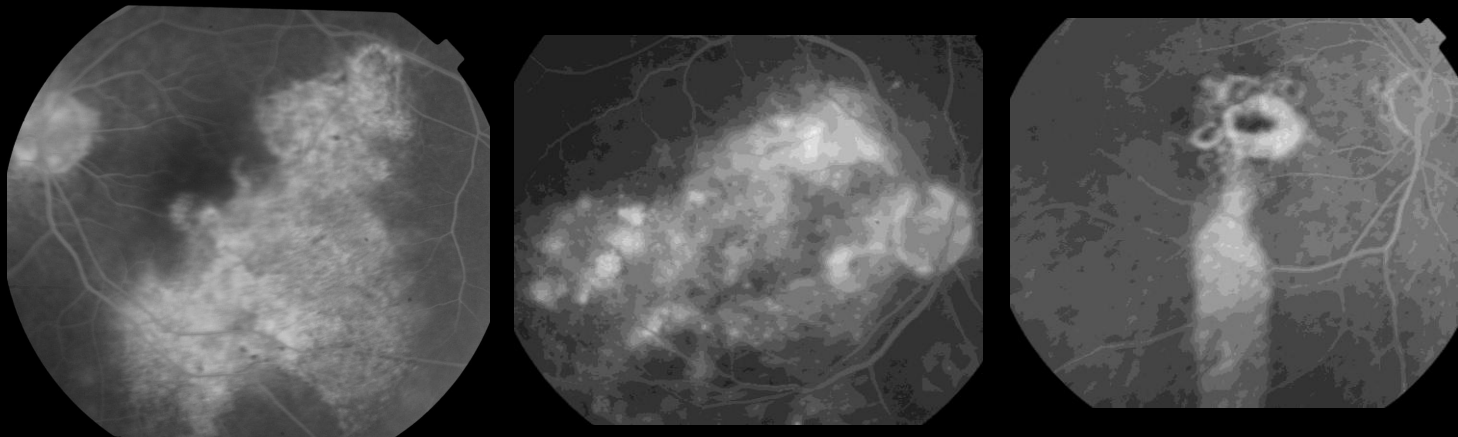


Post PDT 1 year 6/36

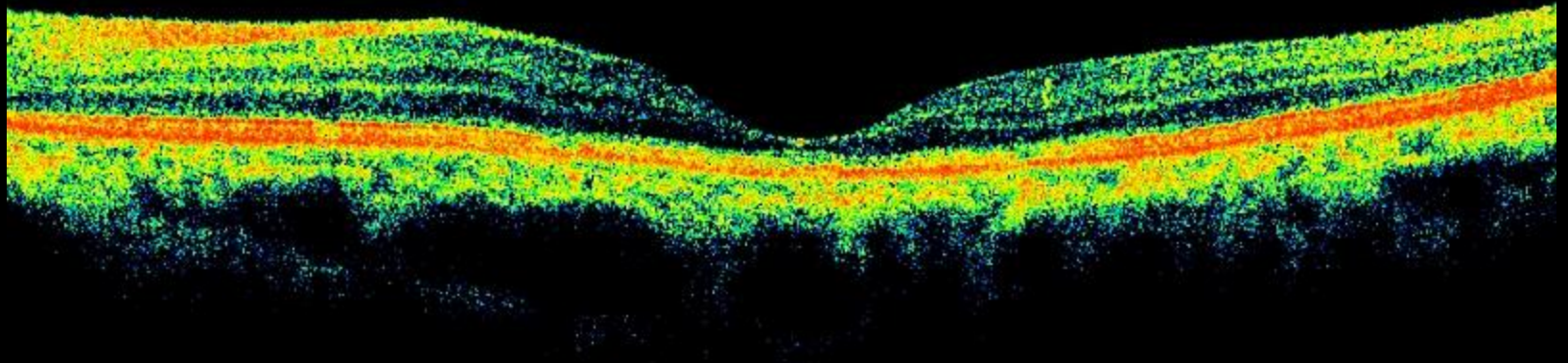
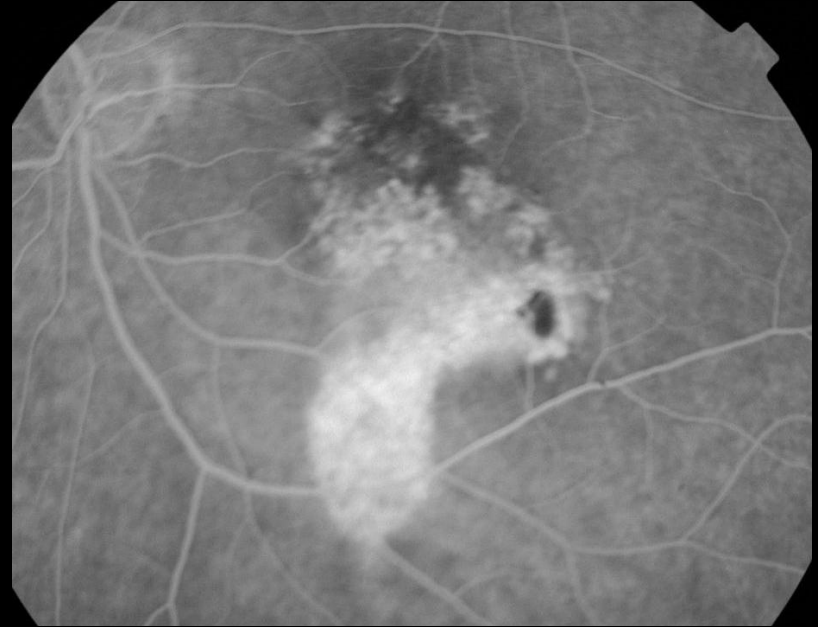


# Fluorescein Angiogram findings

- Indeterminate, extensive leaks
- Extensive RPE atrophy & decompensation
- Gravitational tracks
- Recurrent leaks
- Associated CNVM



LE foveal centre spared, VA 6/9

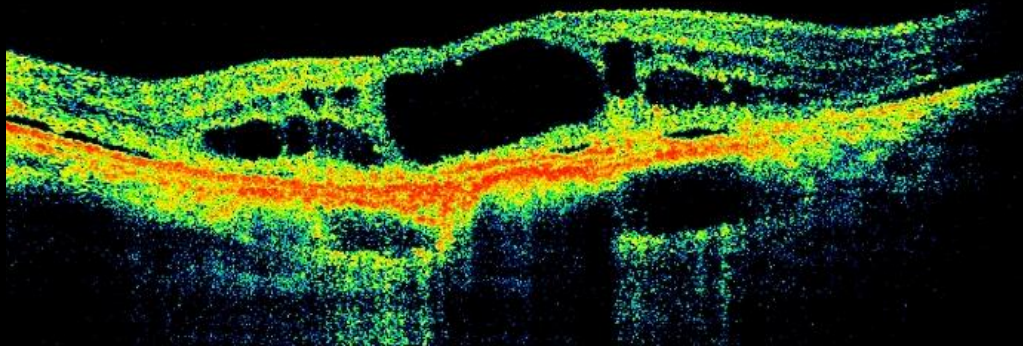
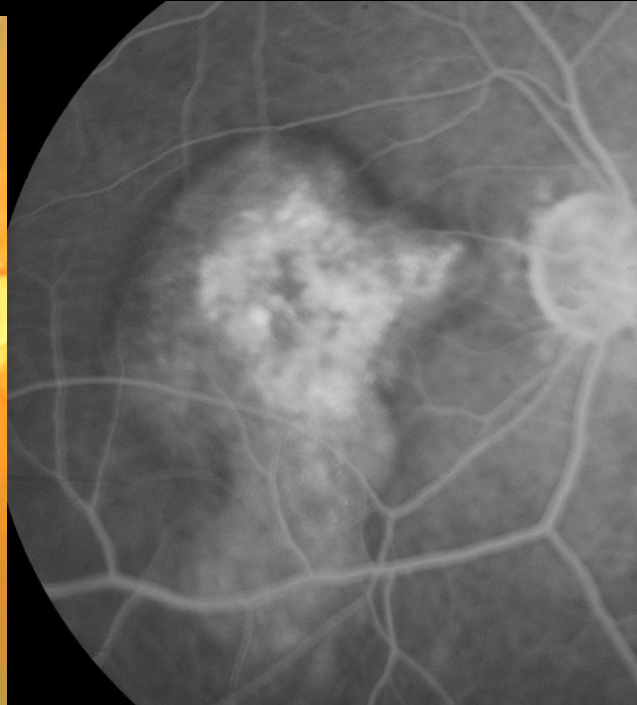
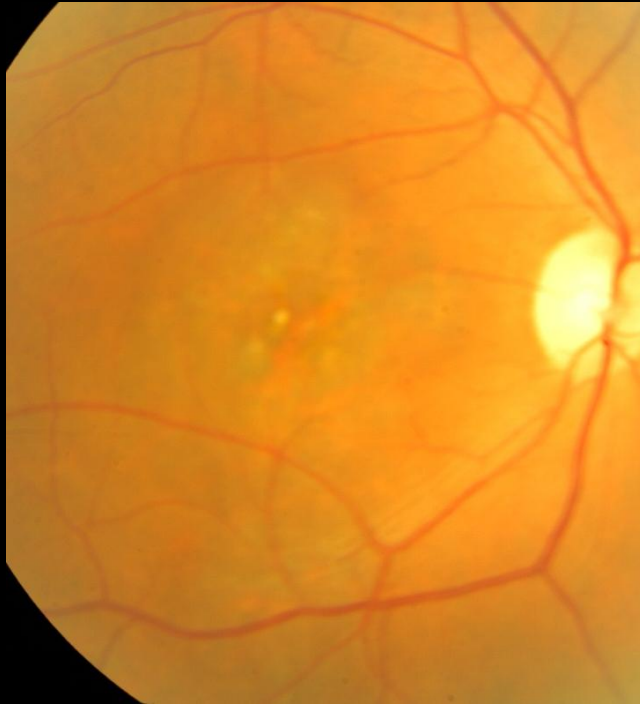




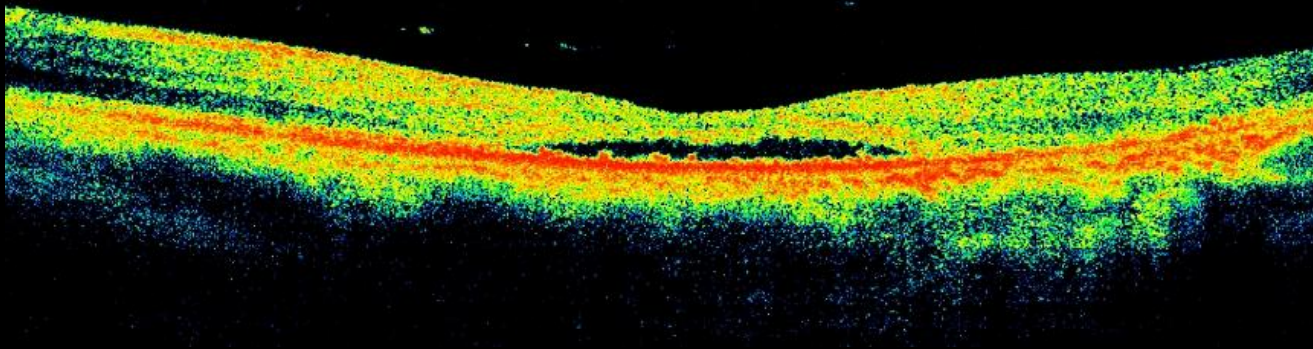
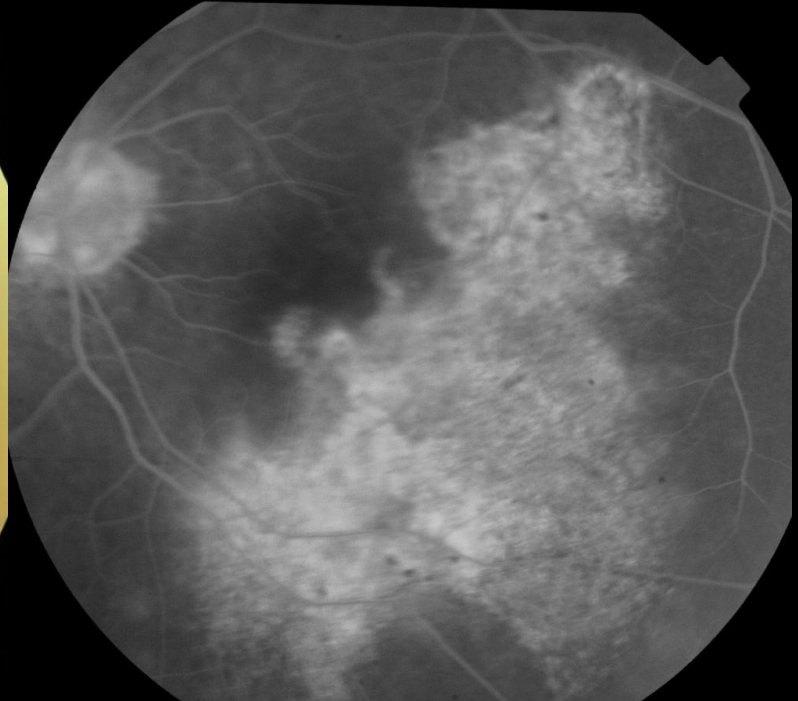
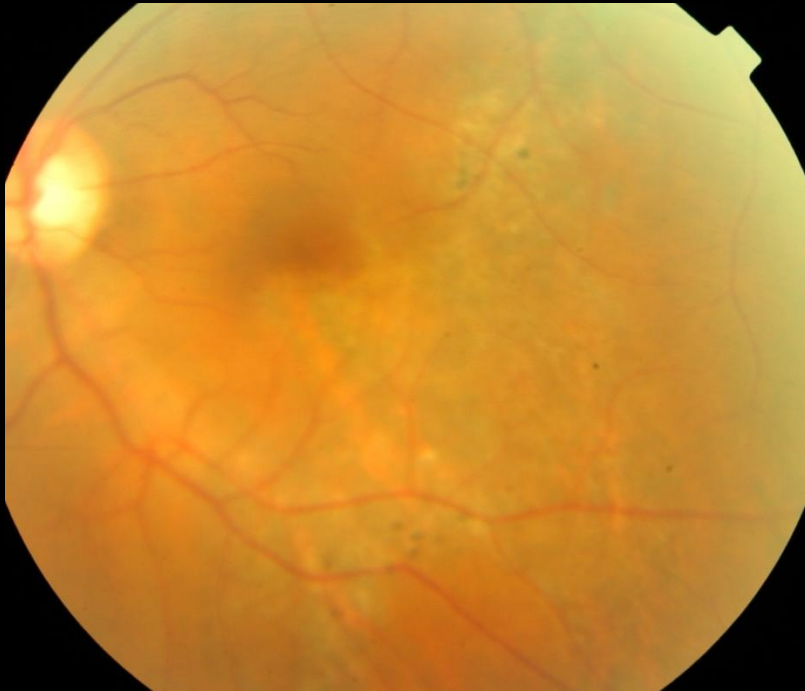
## Case

56 year old male

Symptoms bilateral for several years



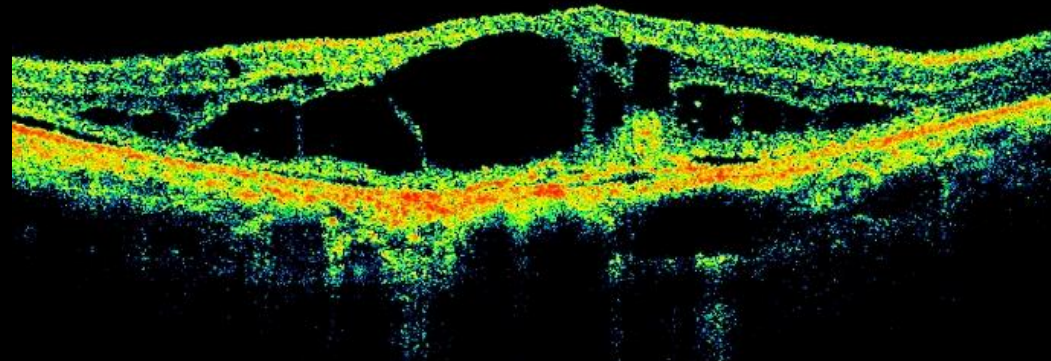
LE Feb 2011



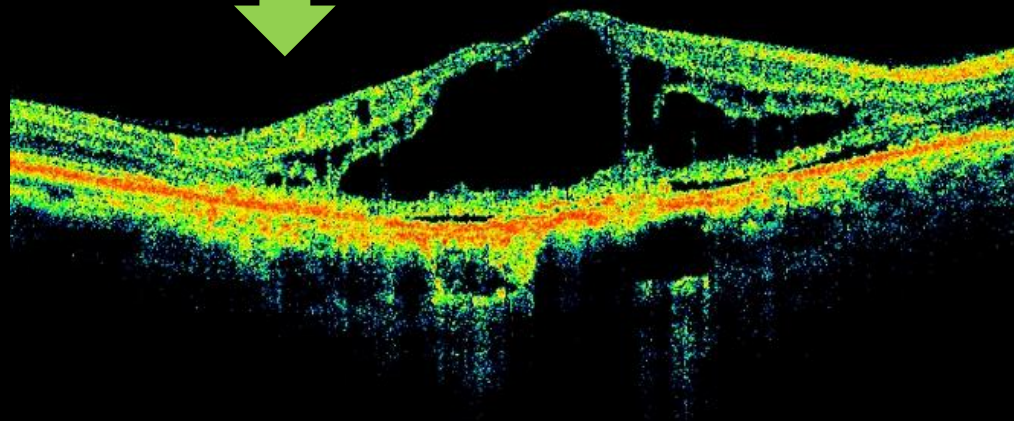
# Right Eye

## Gradual worsening without intervention

May 2011



Apr 2012

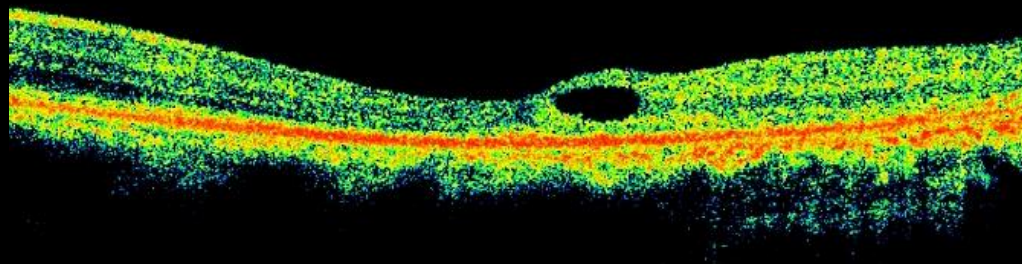




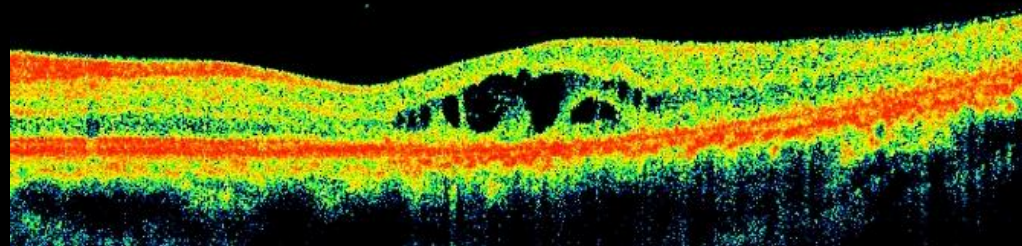
# Left Eye

## Gradual worsening without intervention

May 2011



Apr 2012

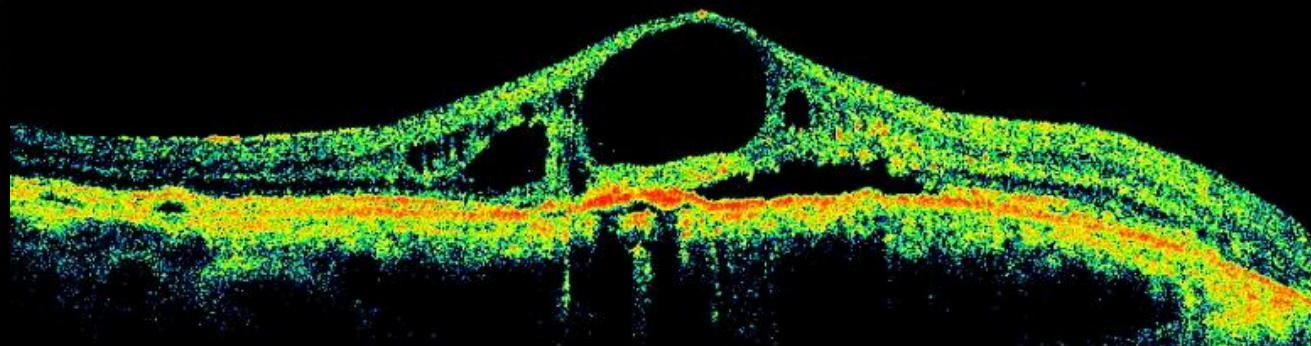
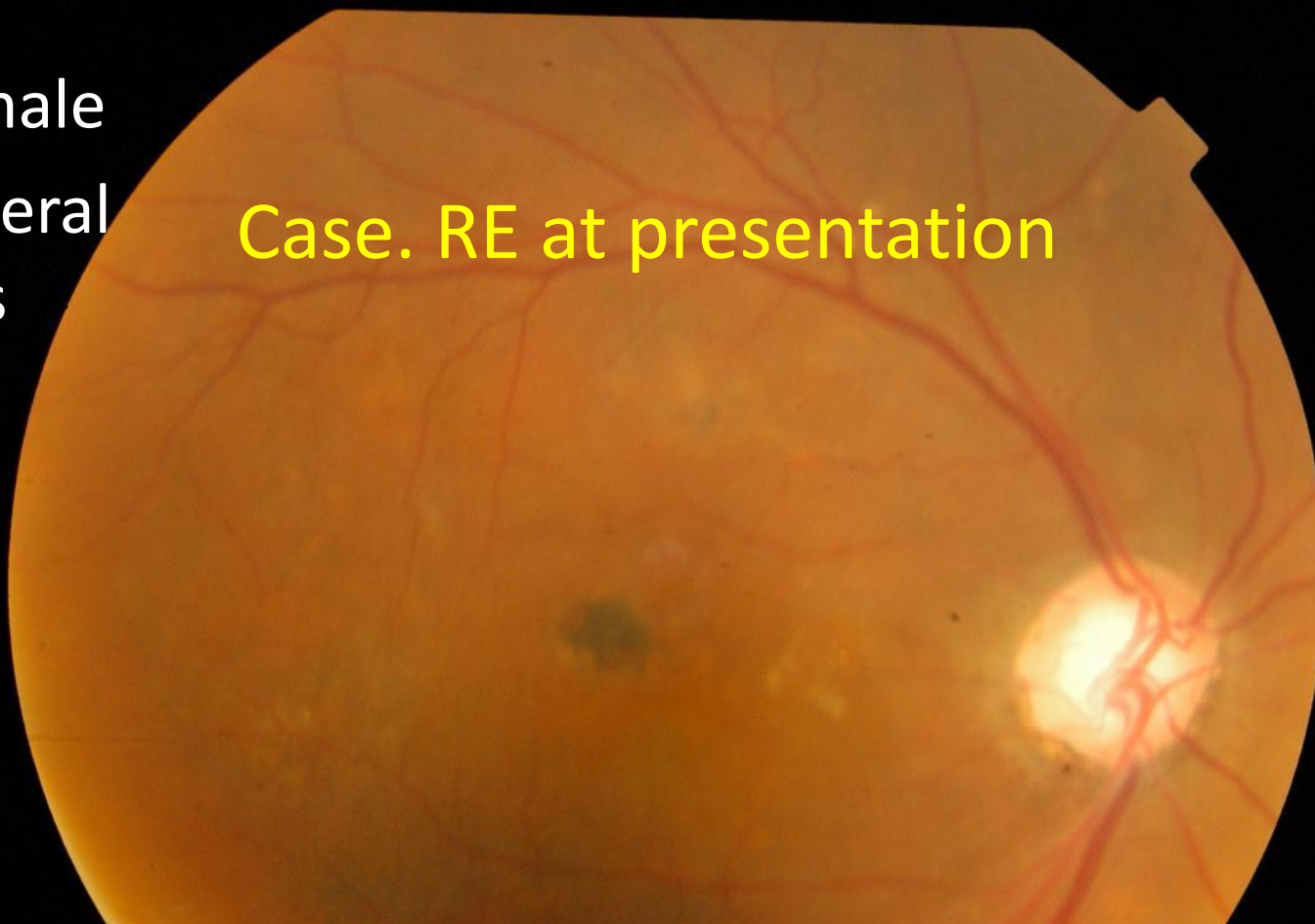


# Management of Chronic Atypical CSCR

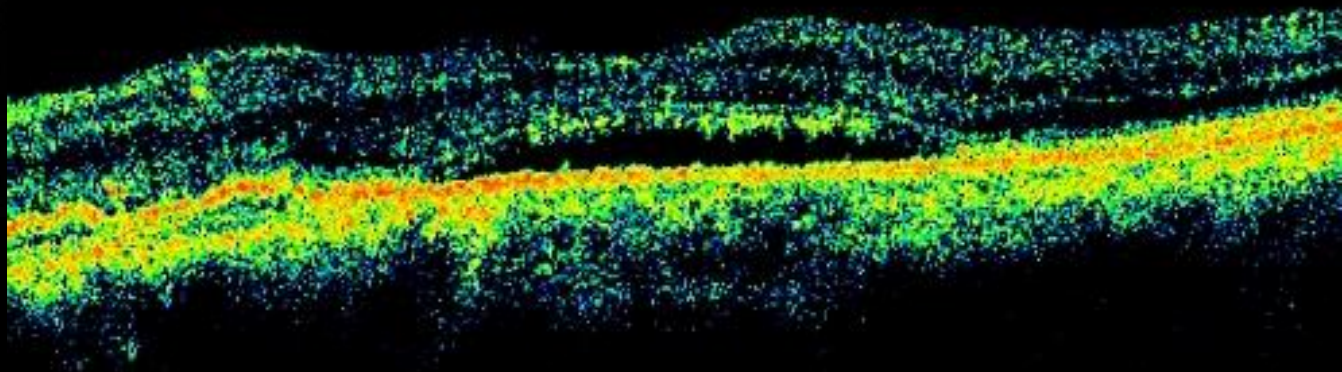
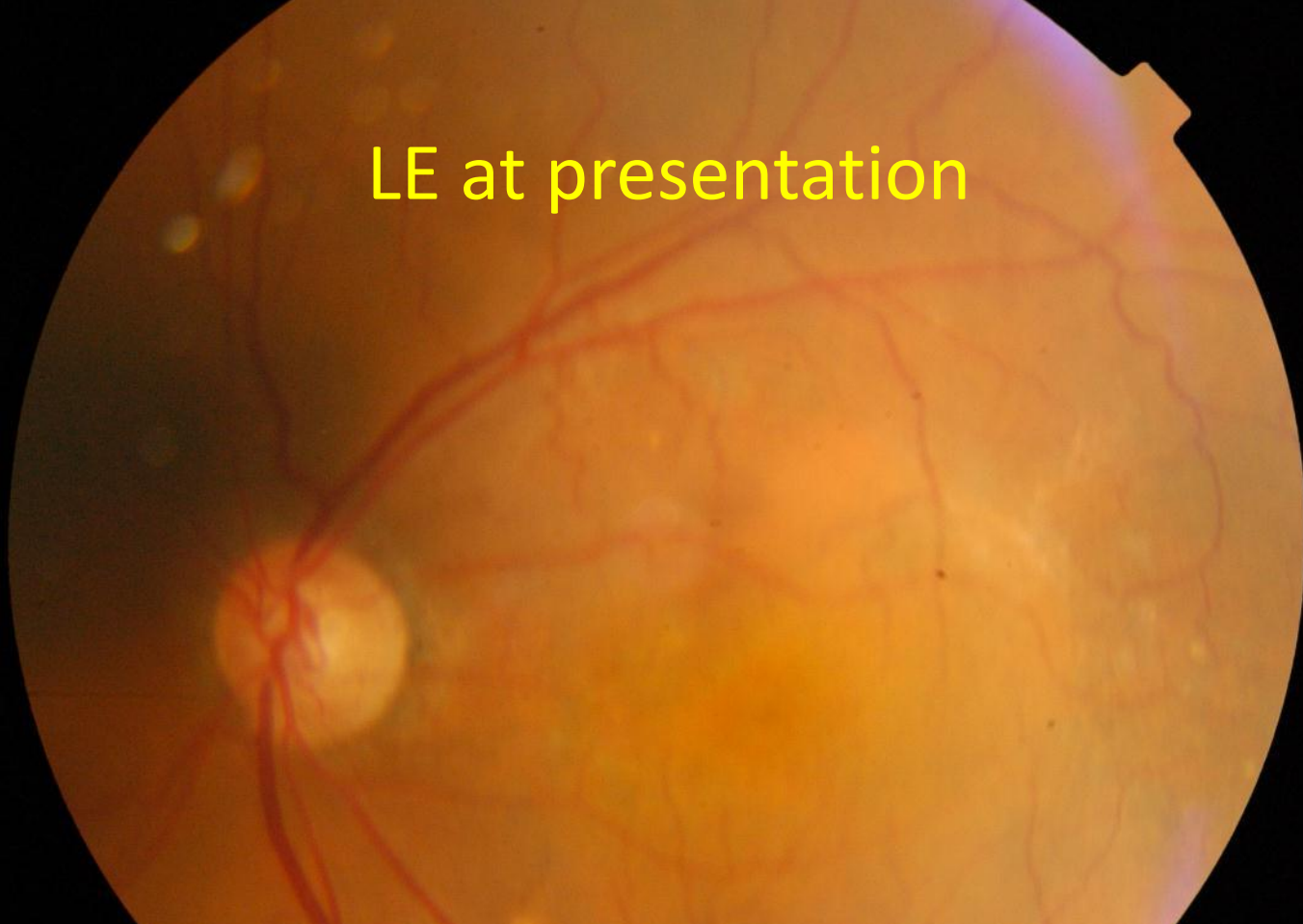
- PDT
  - reduced dose (3mg/m)
  - reduced fluence (25 J/ cm)
  - reduced duration (42 sec)
  - full fluence for large exudative lesions
- anti-VEGF therapy
- Focal photocoagulation

- 53 yo male
- h/o several months

Case. RE at presentation

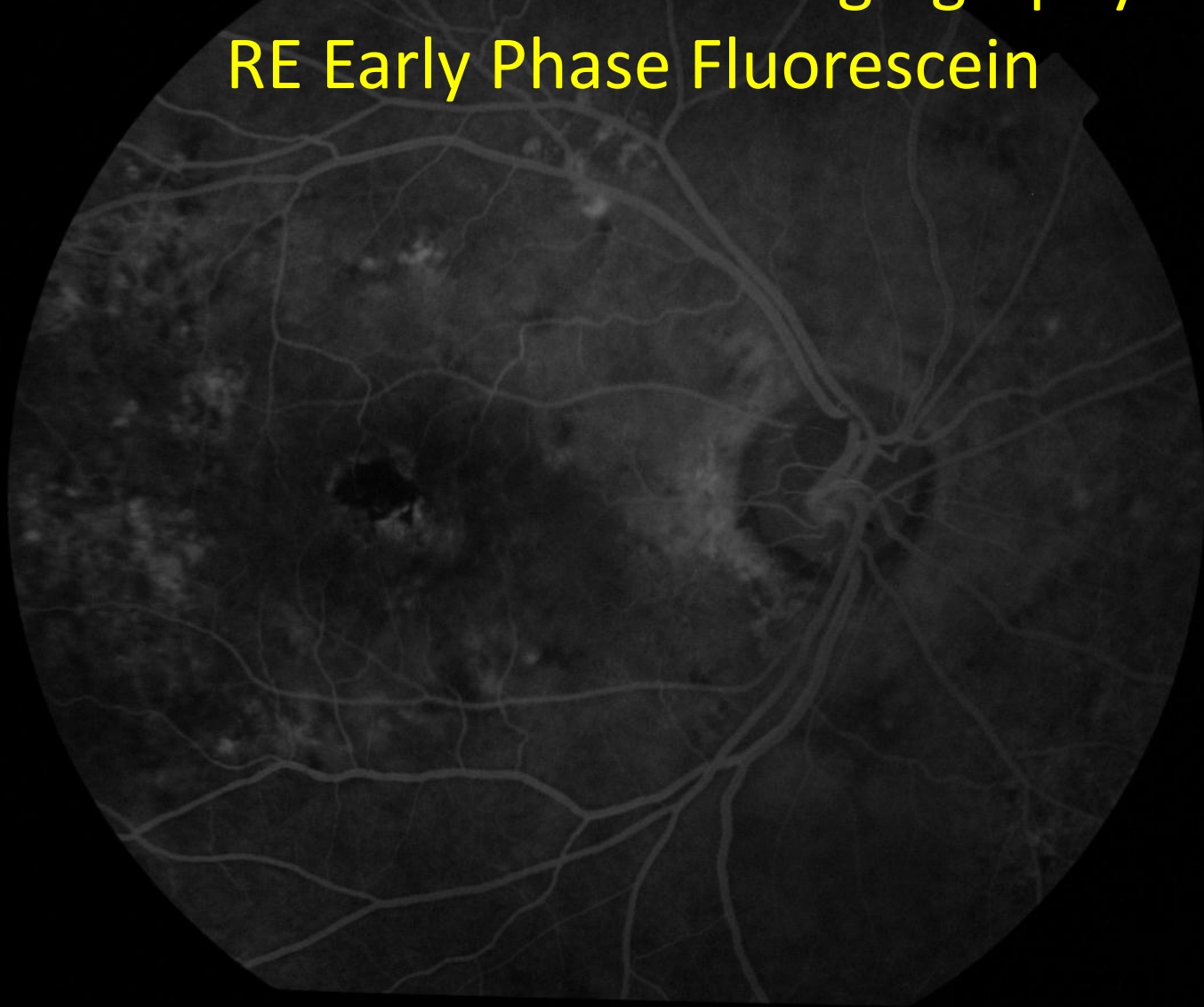


LE at presentation

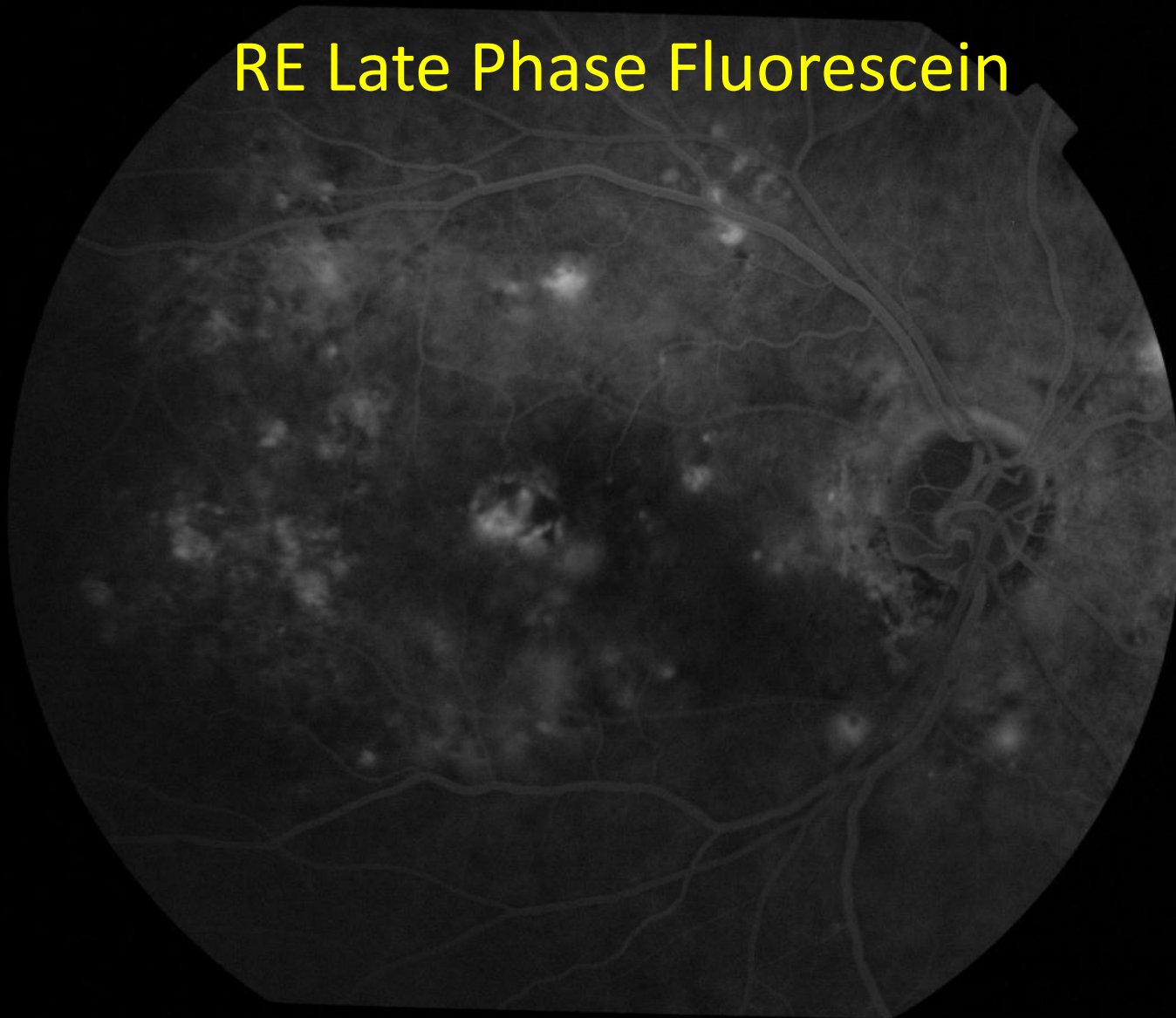




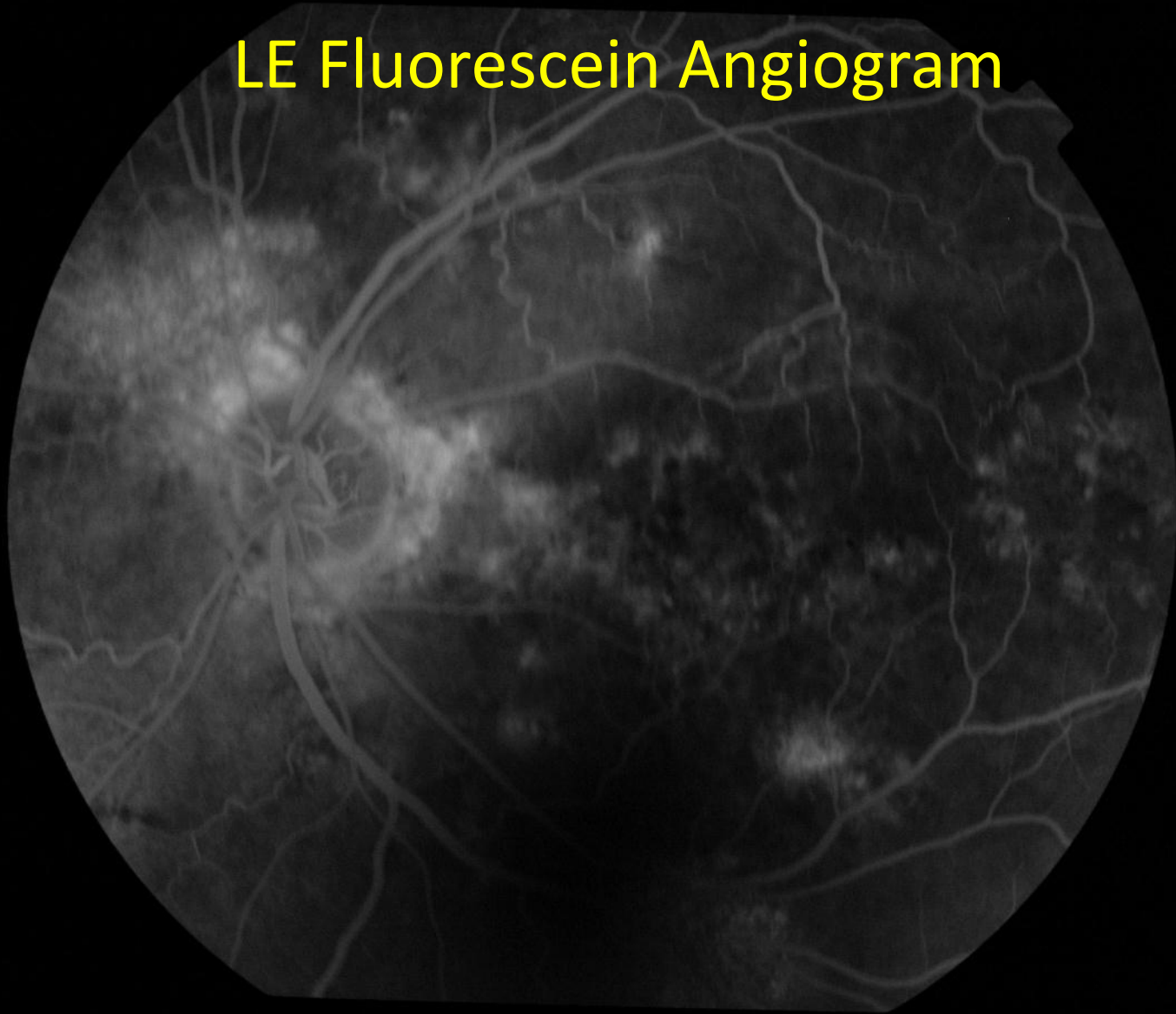
Fundus Fluorescein Angiography  
RE Early Phase Fluorescein



# RE Late Phase Fluorescein

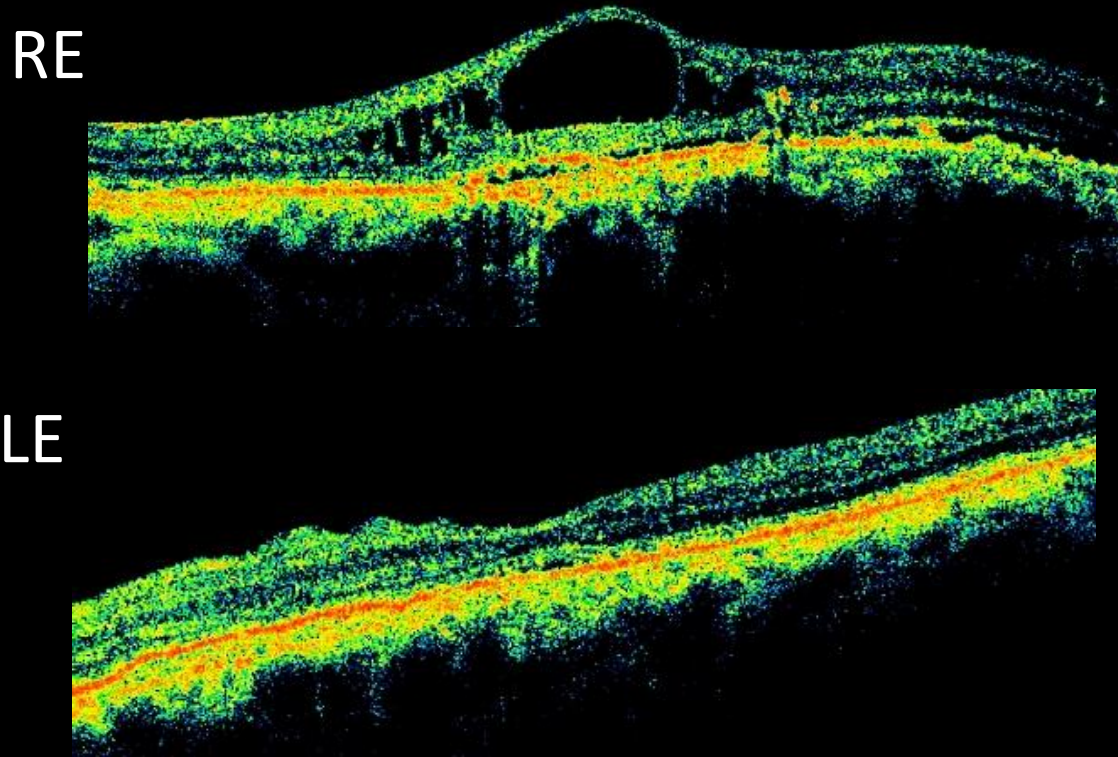


# LE Fluorescein Angiogram



# Both eyes focal laser

Resolution of submacular fluid 3 months post-laser

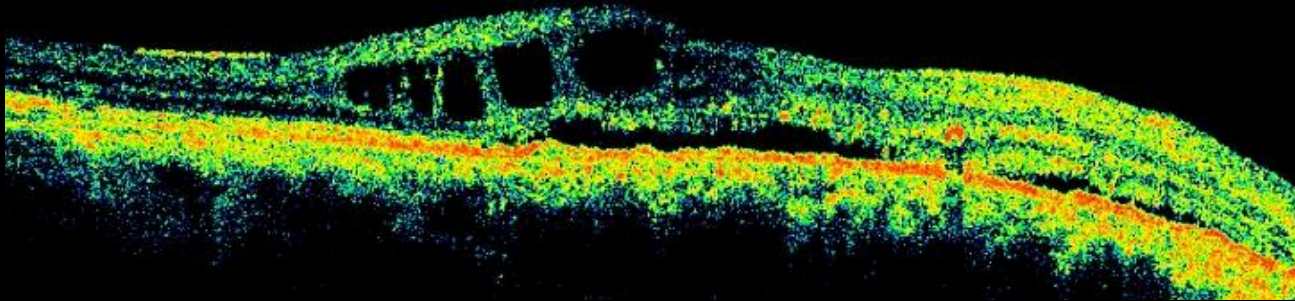




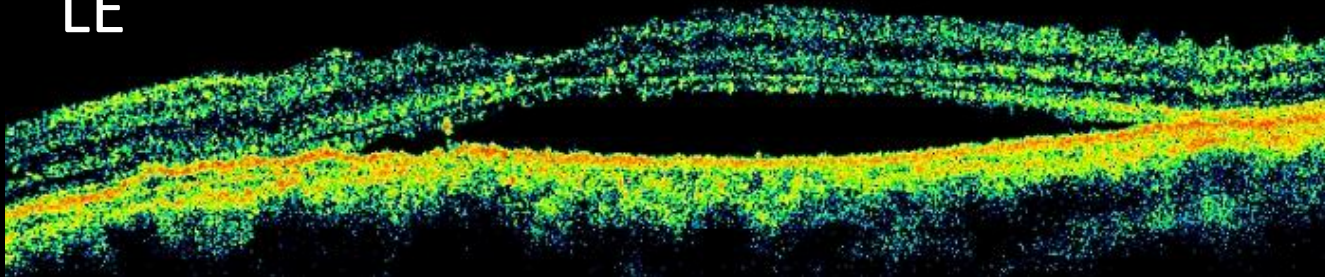
# 8 months post-laser

Reappearance of submacular fluid

RE



LE



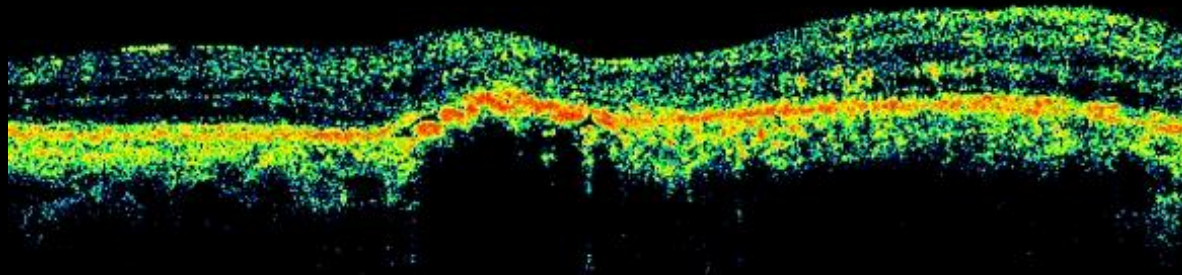
# 6 weeks after half fluence PDT

August 2012

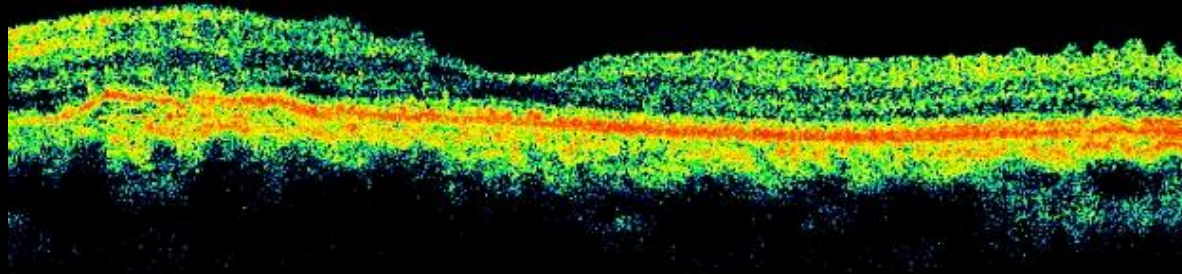
Complete resolution

No recurrence over 2 years

RE

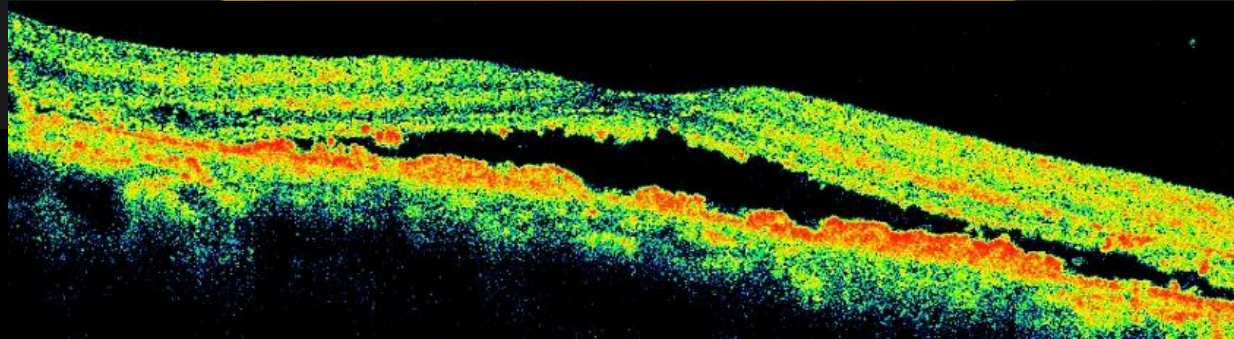


LE



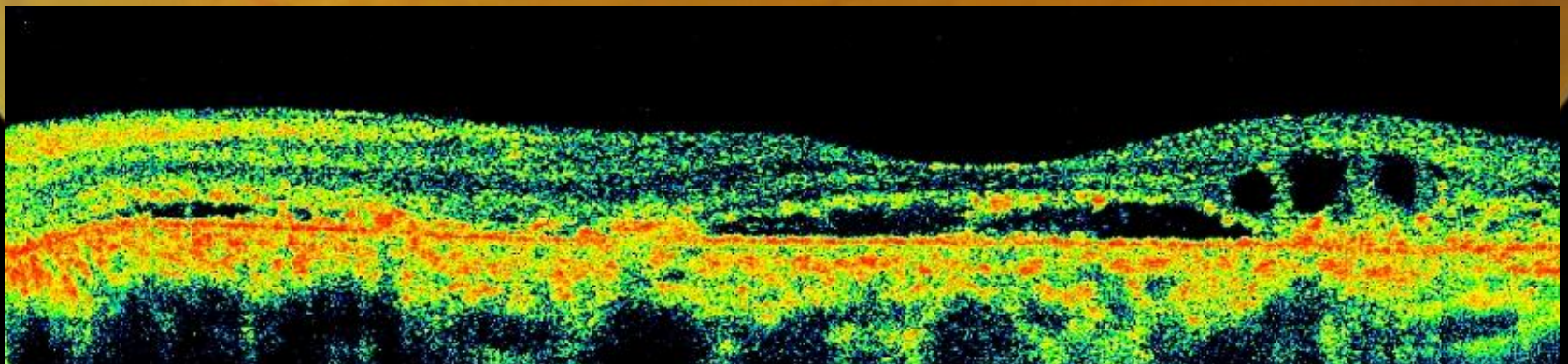
## Case

- 55 year old male
- c/o several months



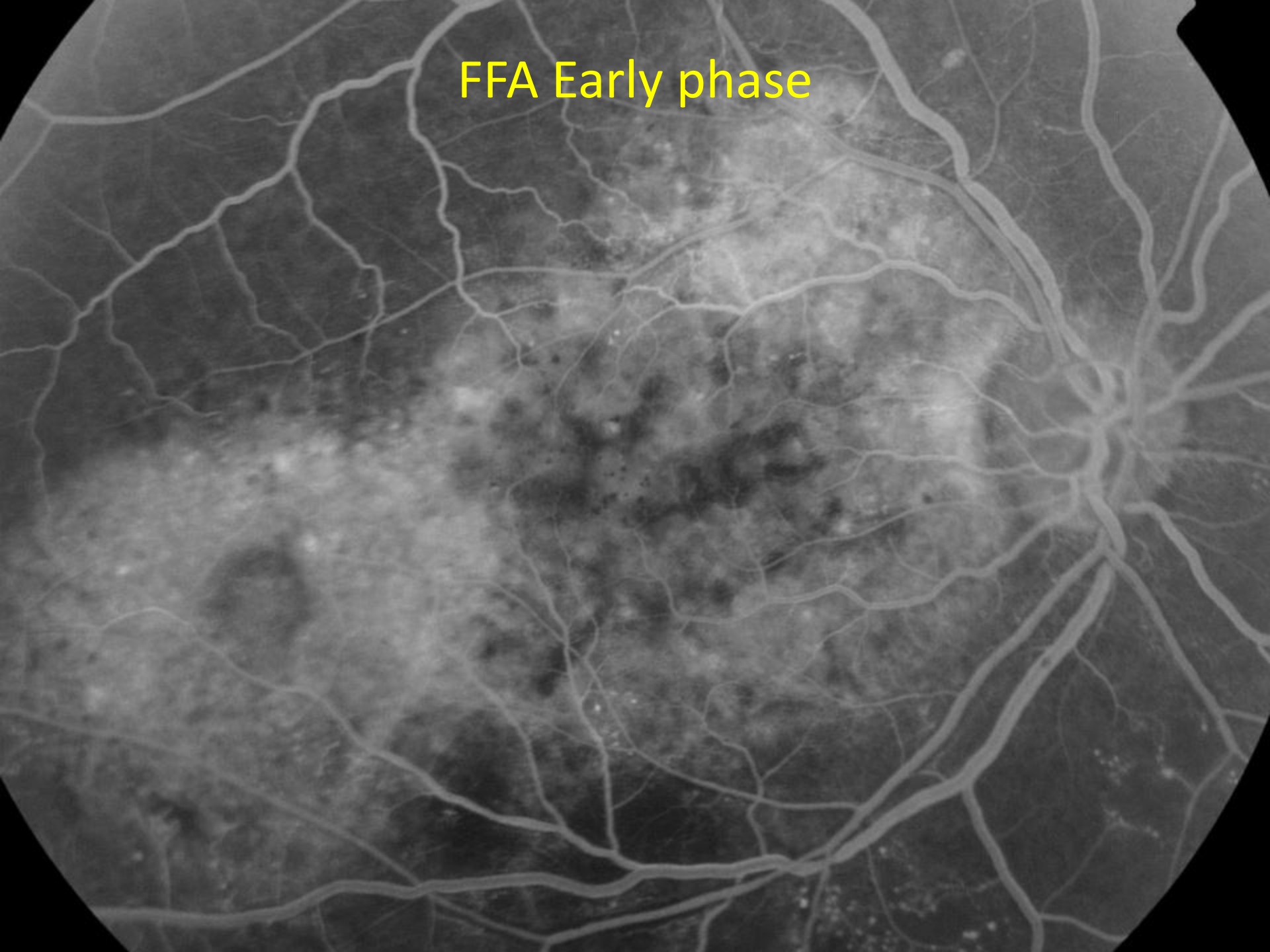


LE at presentation

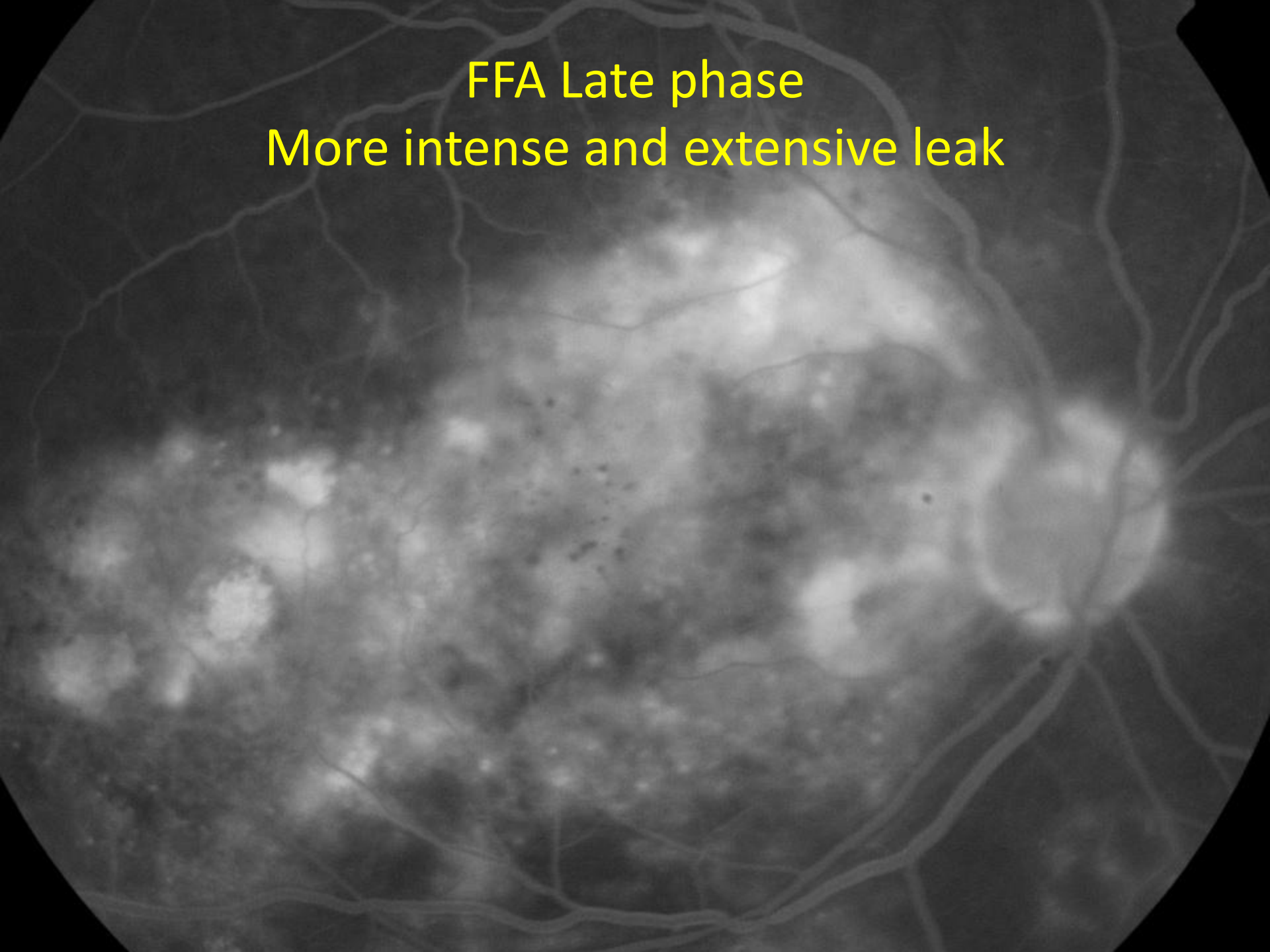




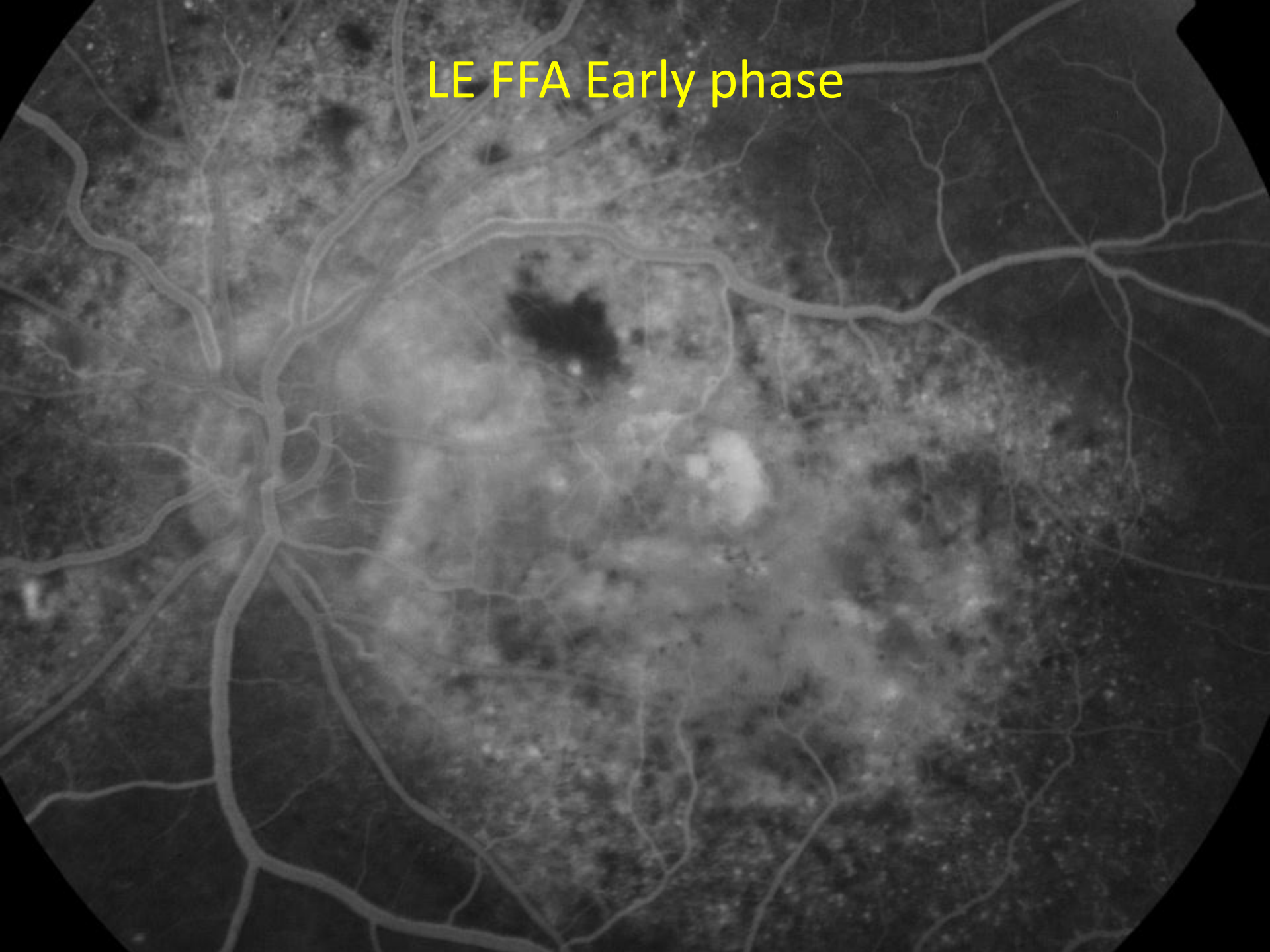
FFA Early phase



FFA Late phase  
More intense and extensive leak

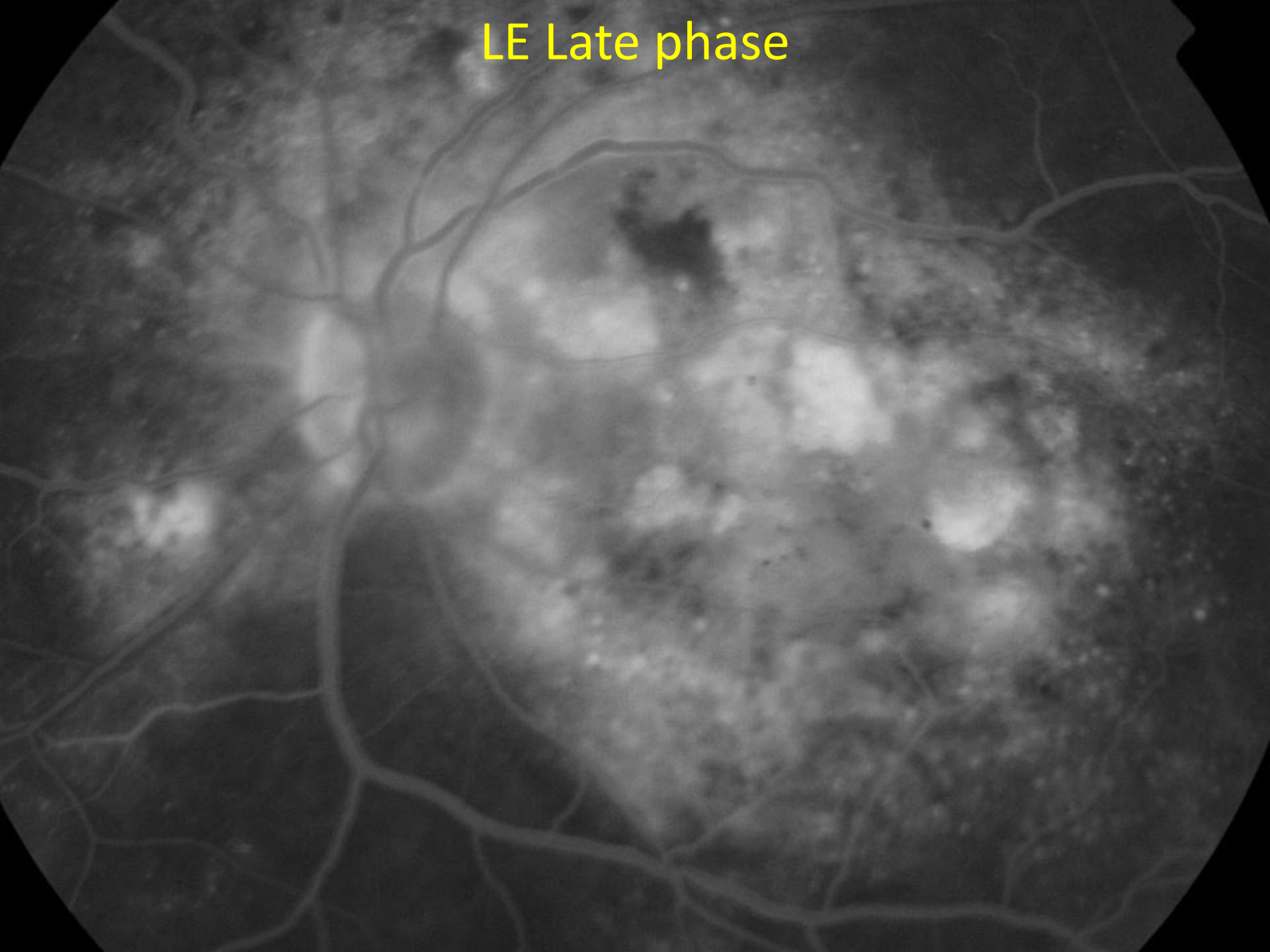


LE FFA Early phase



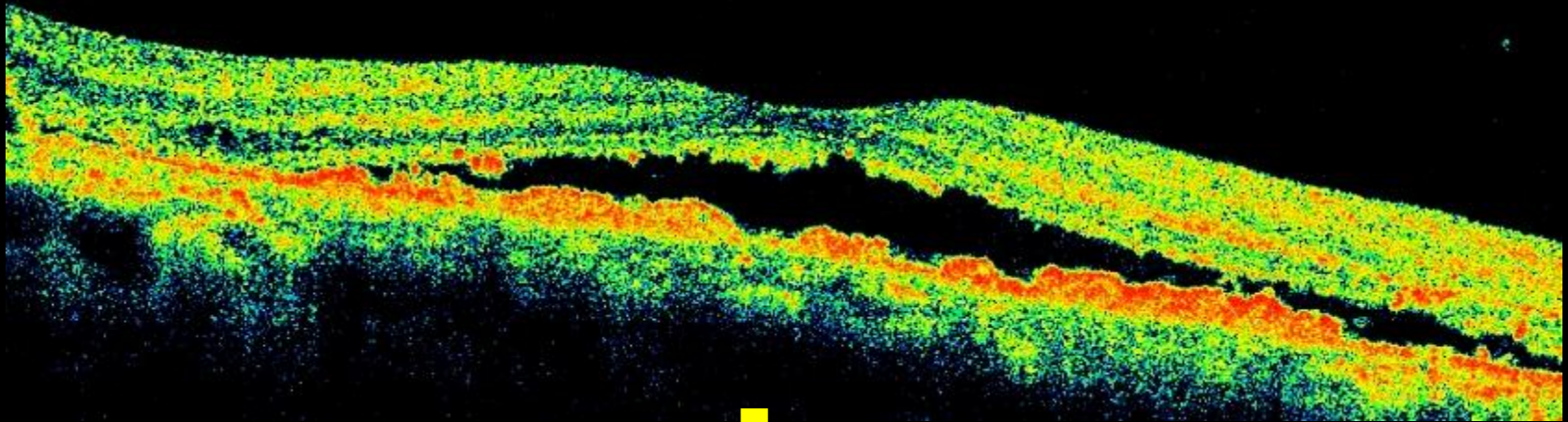


LE Late phase

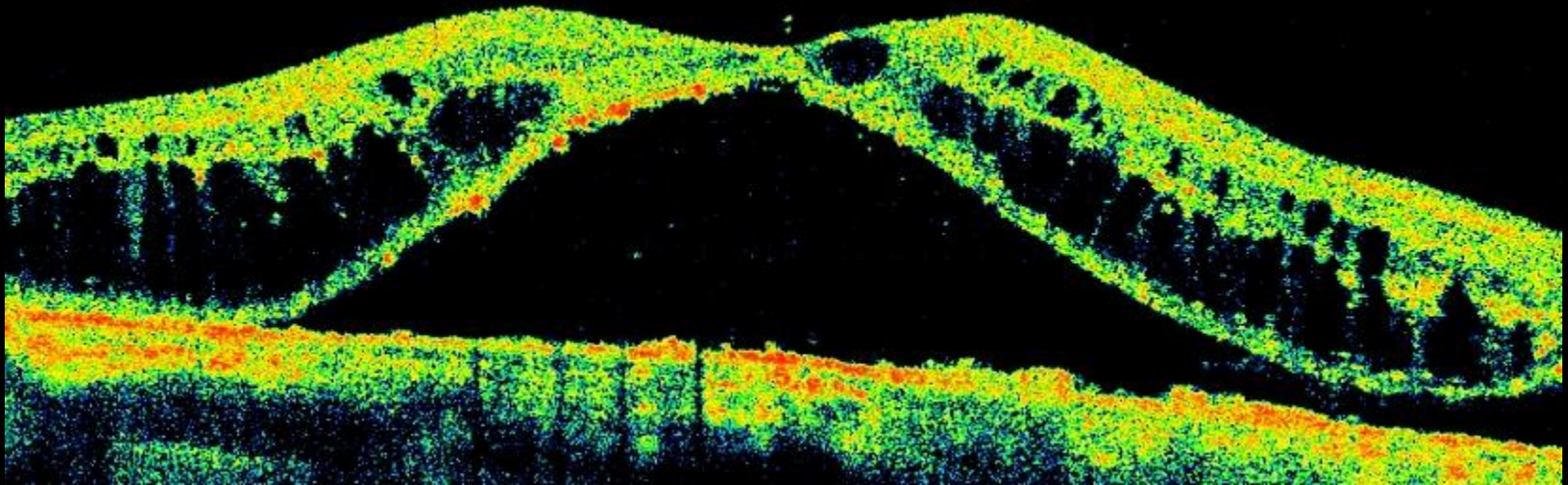




RE progression in 8 months  
August 2010 to April 2011

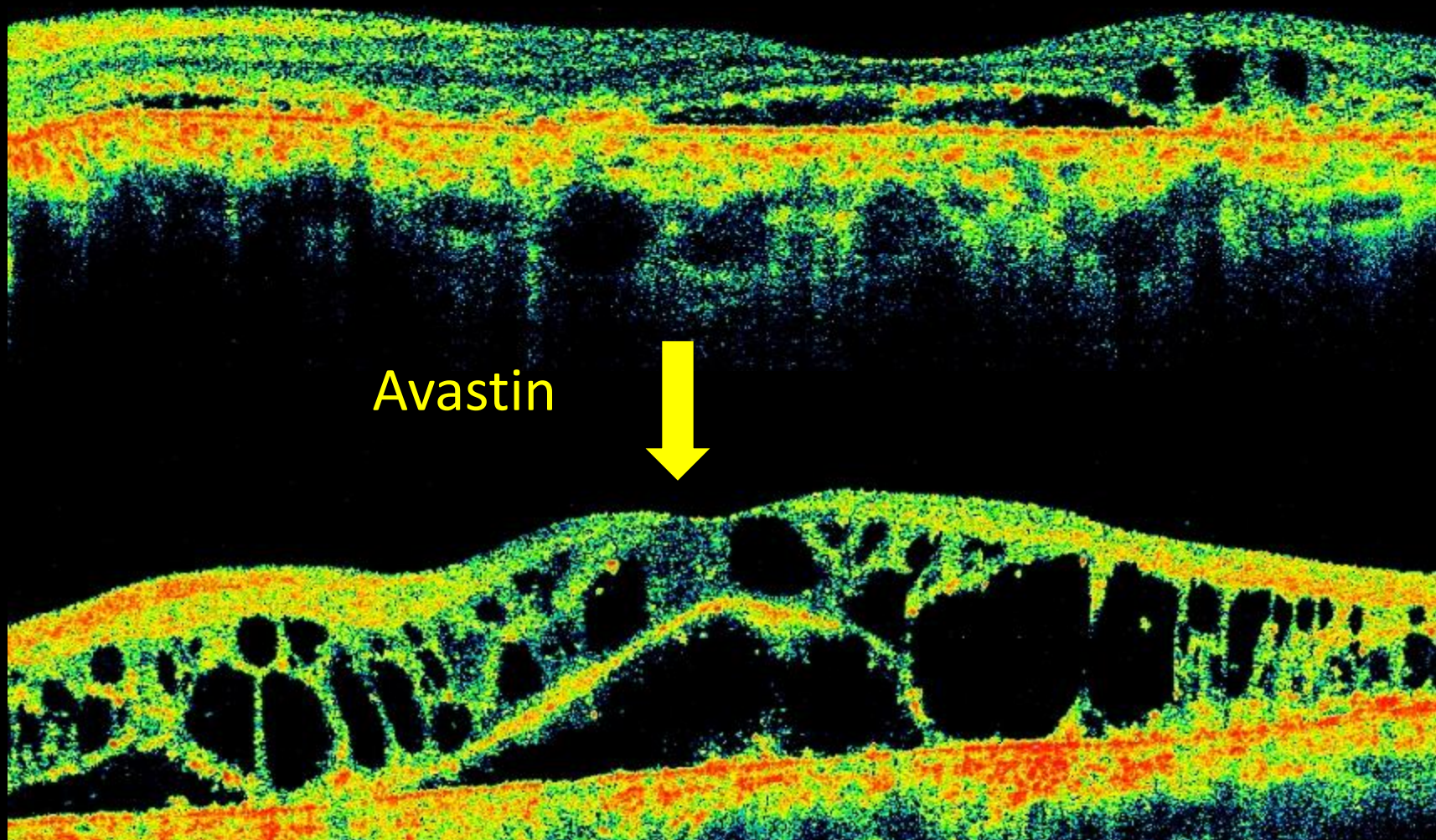


Avastin





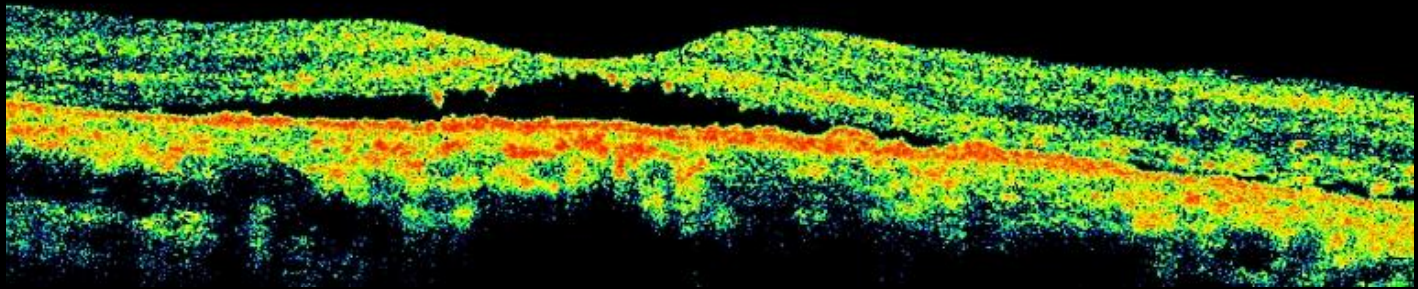
# LE progression in 8 months on avastin



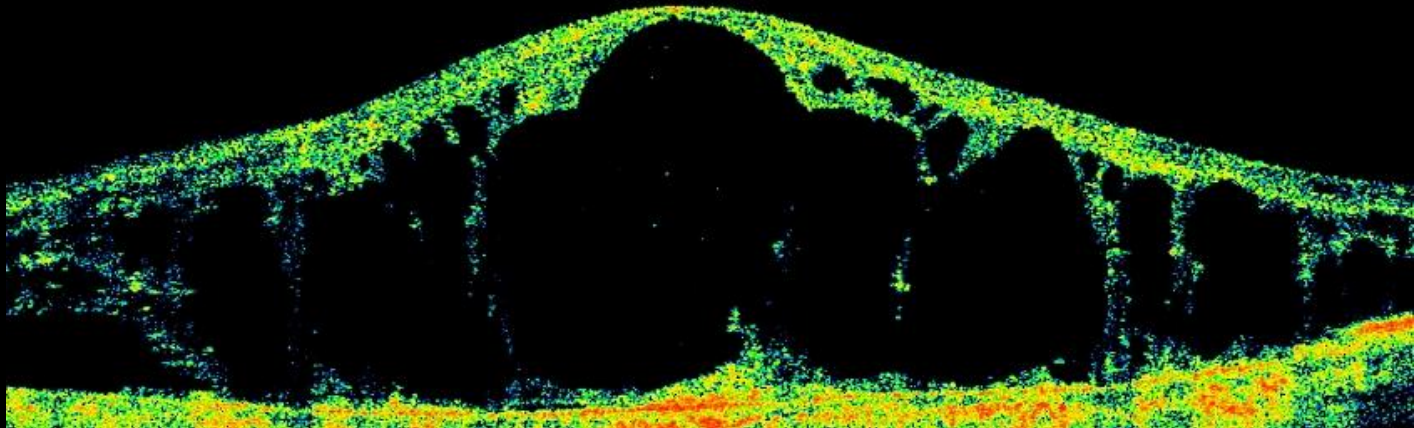
# Standard fluence PDT, April 2011

## 8 weeks post-PDT

RE marked resolution of fluid



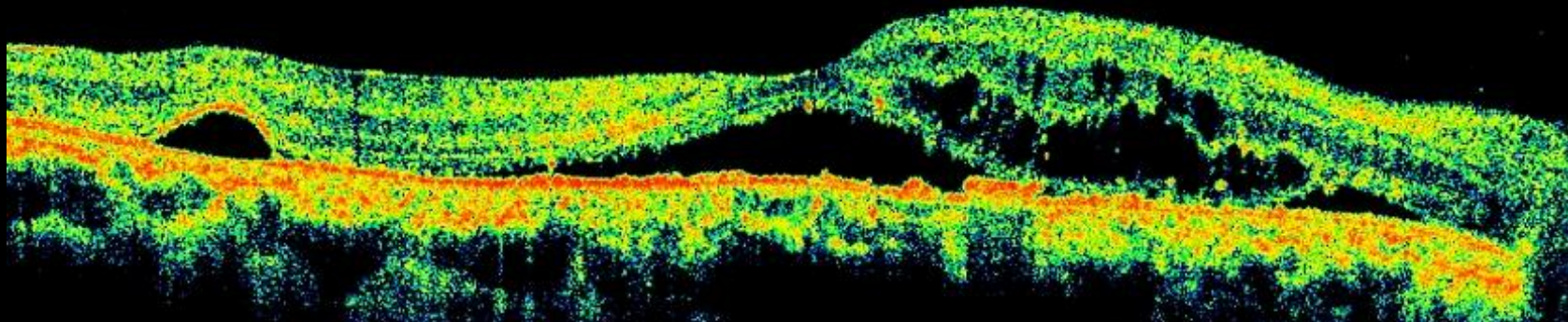
LE no response



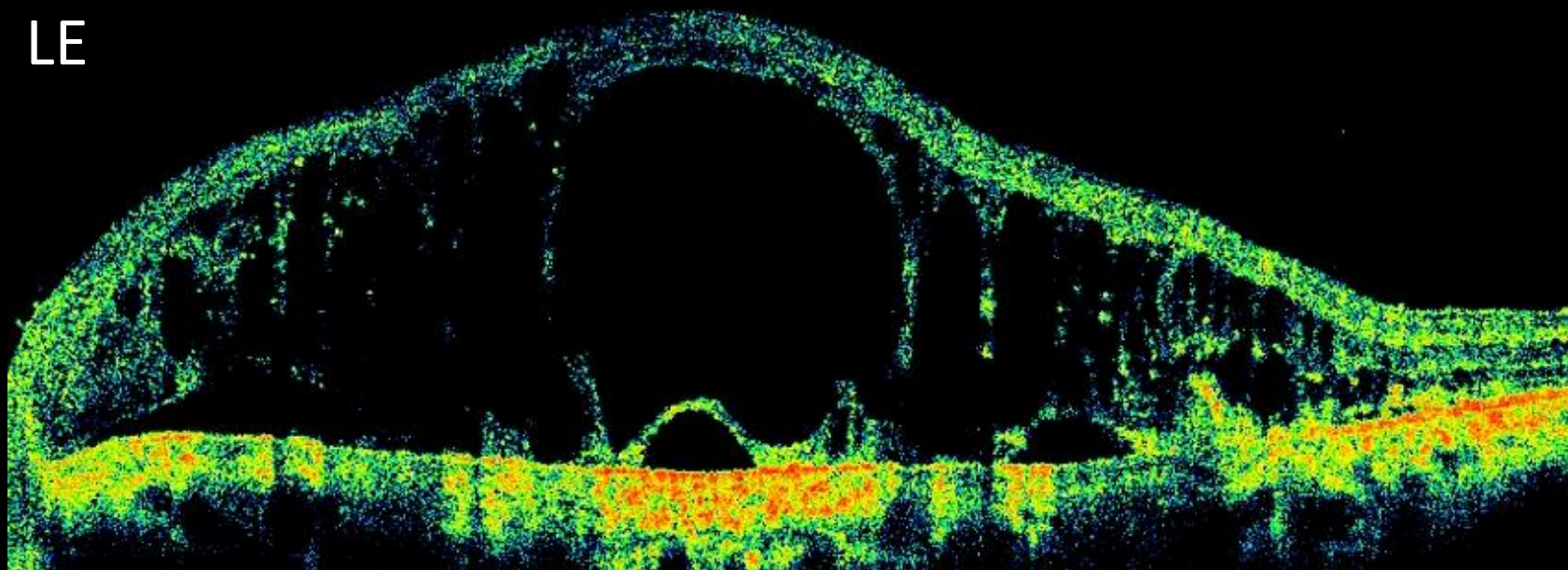


4 months post-PDT: Recurrence  
August 2011

RE

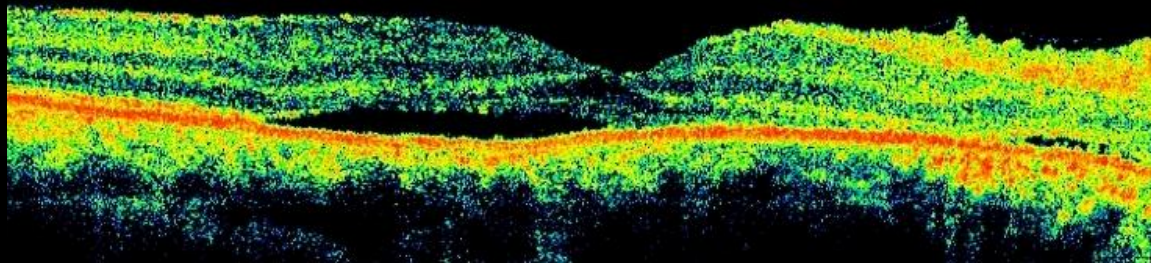
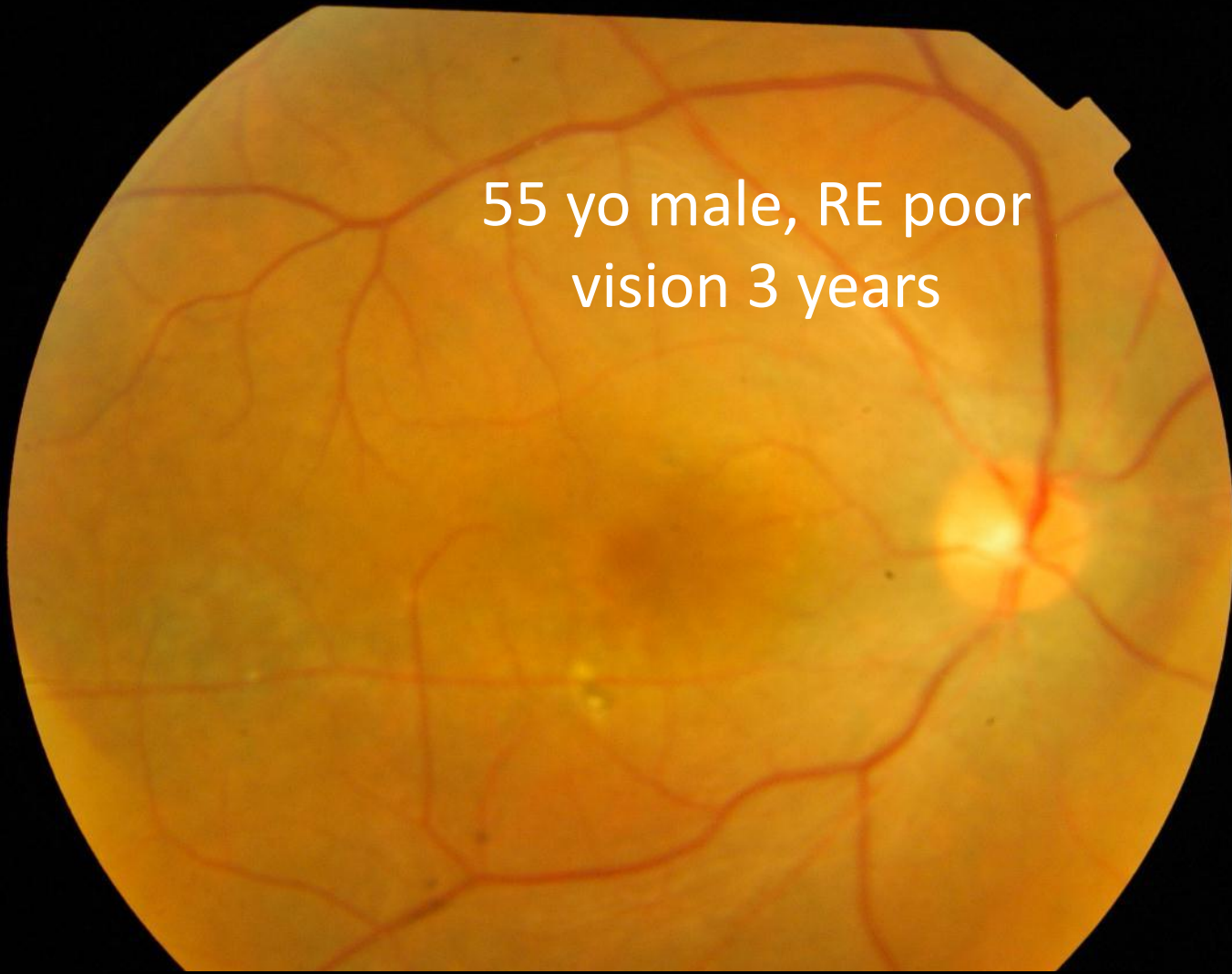


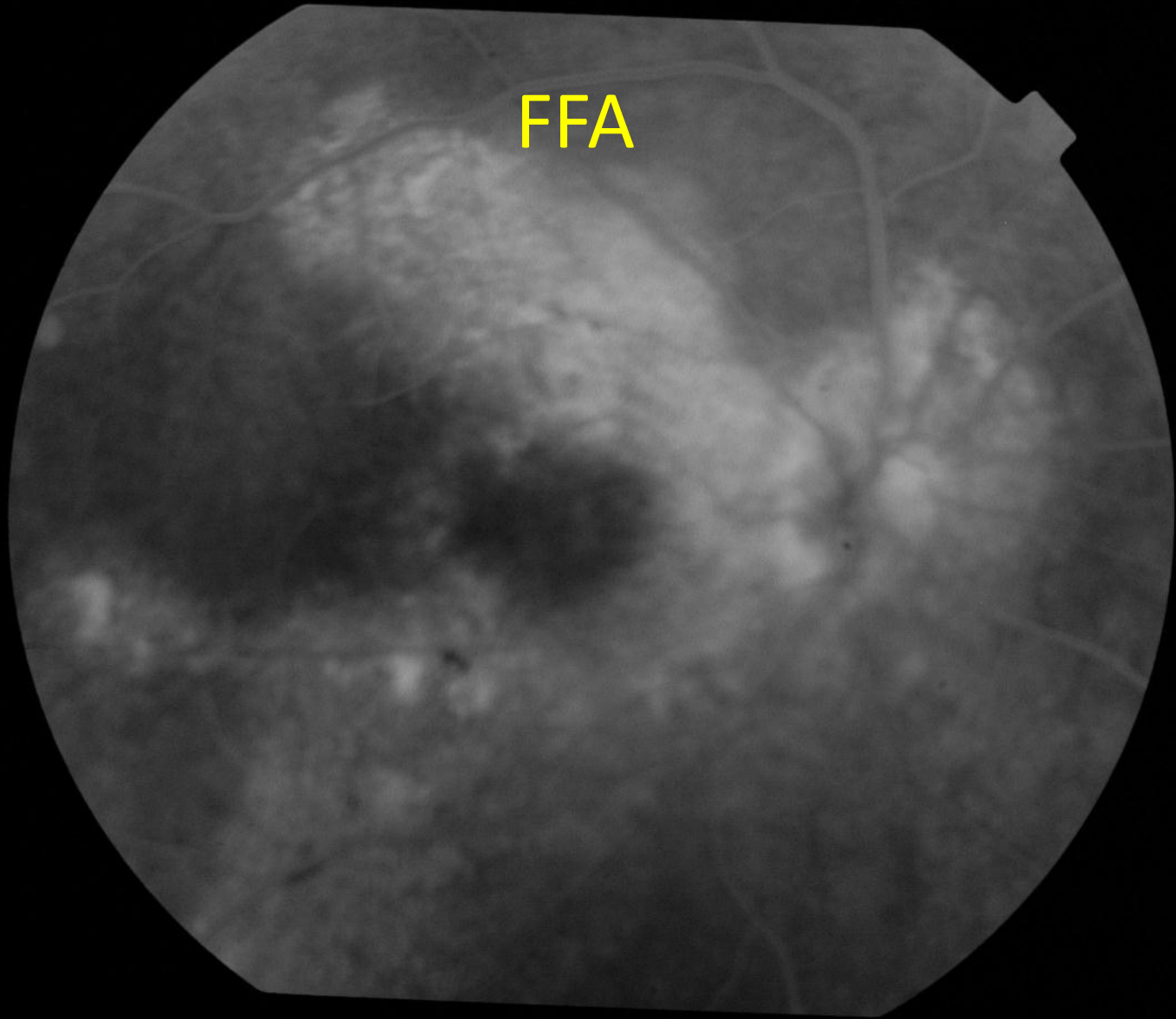
LE





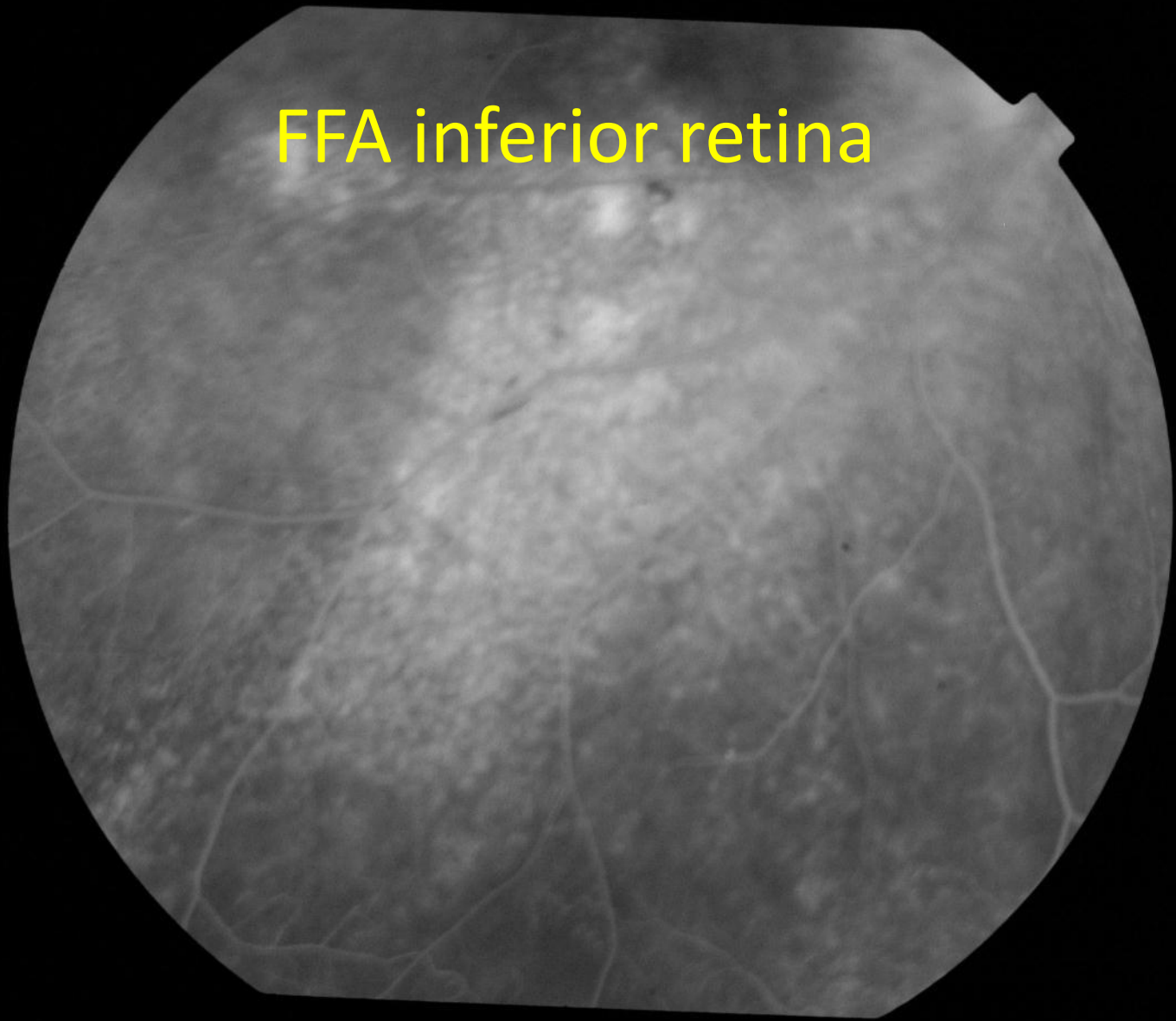
55 yo male, RE poor  
vision 3 years





FFA

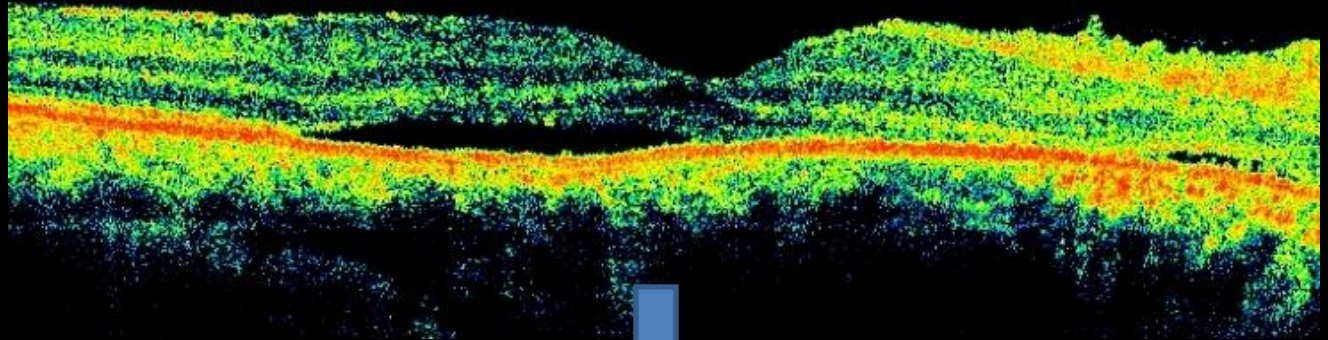
FFA inferior retina



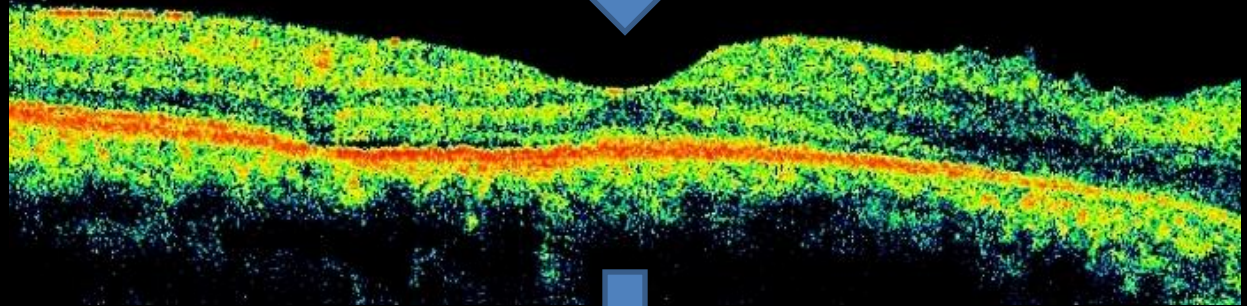


# Injection Avastin twice

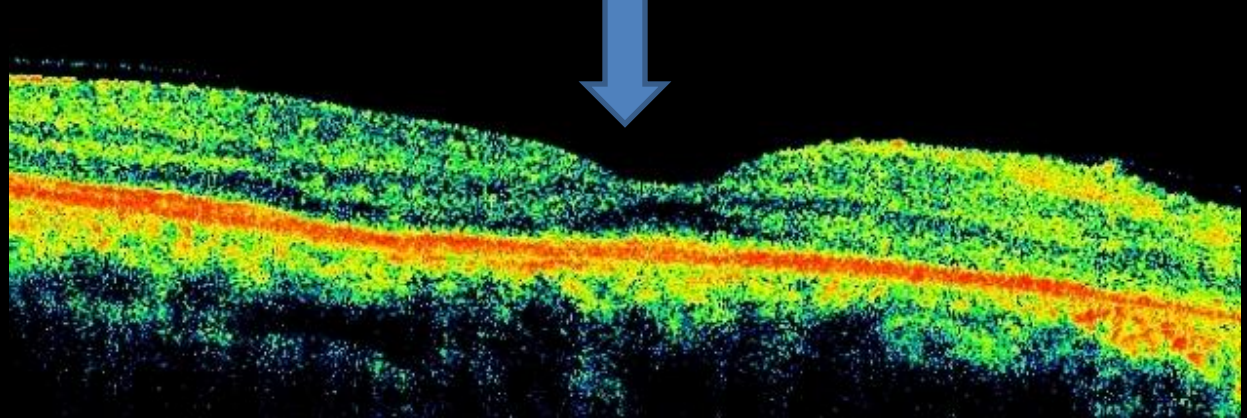
Jan 2014



Mar 2014

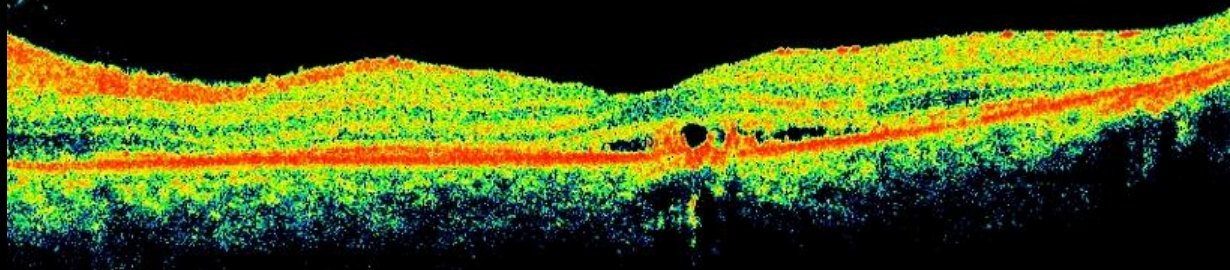
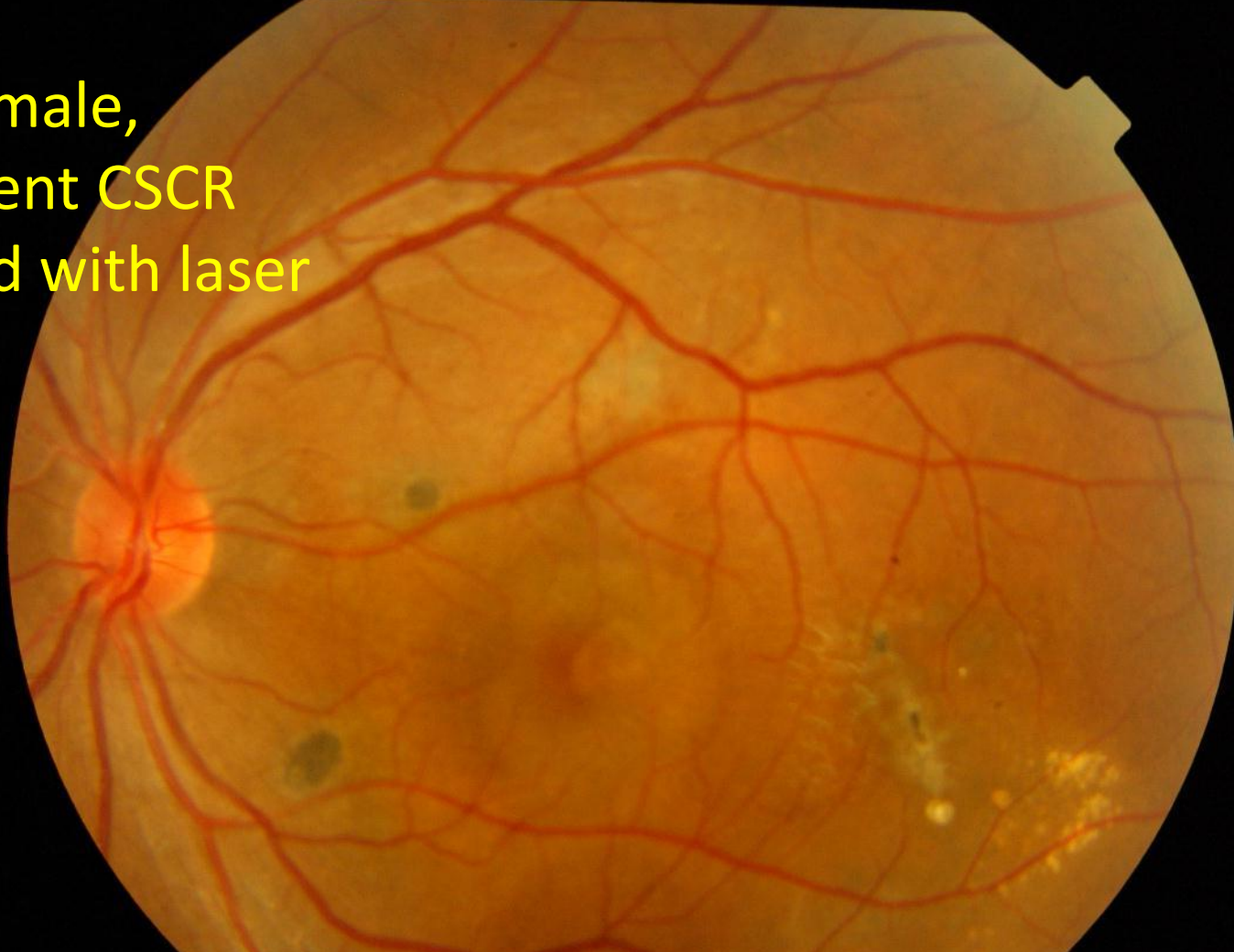


Jul 2014

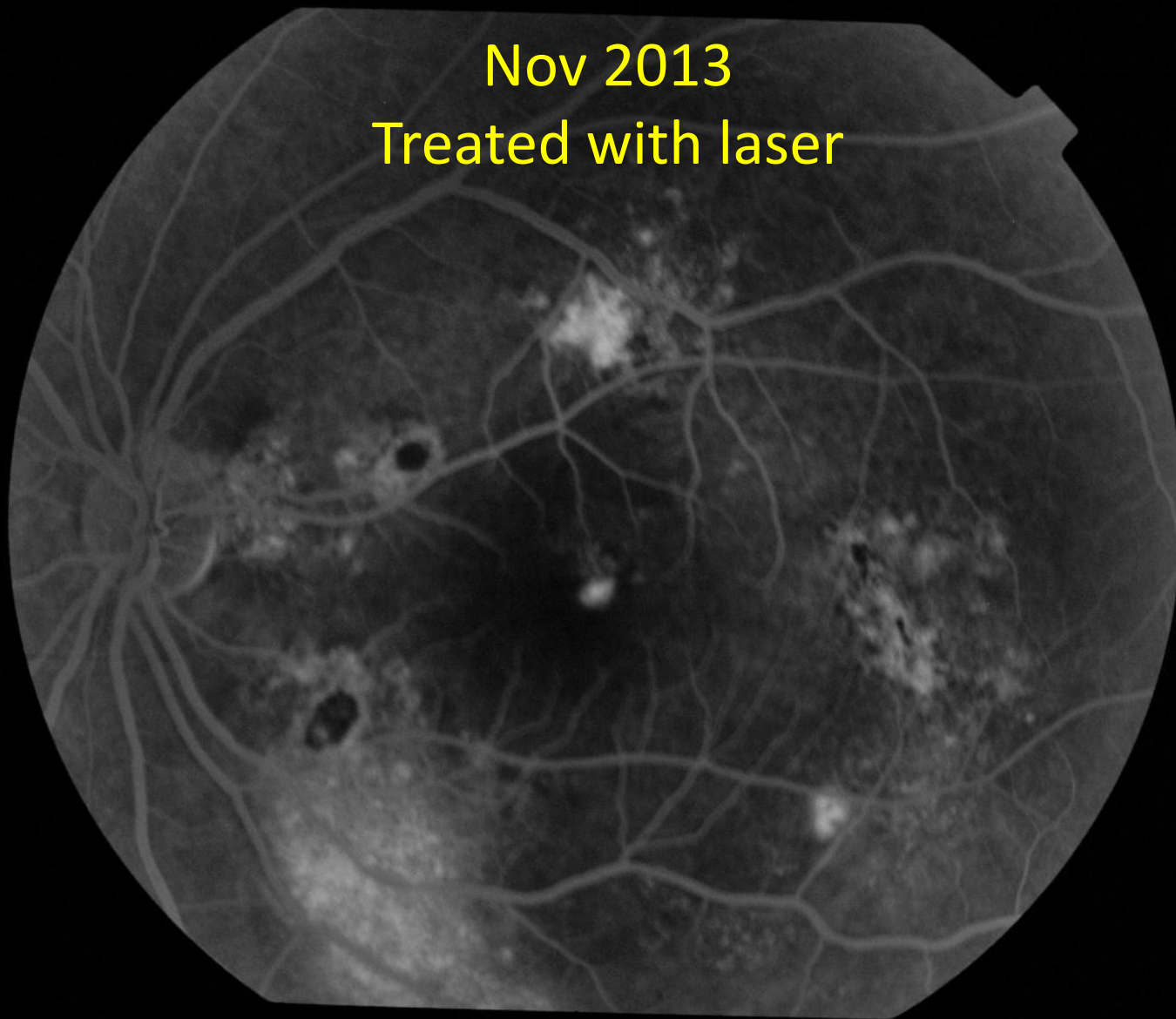




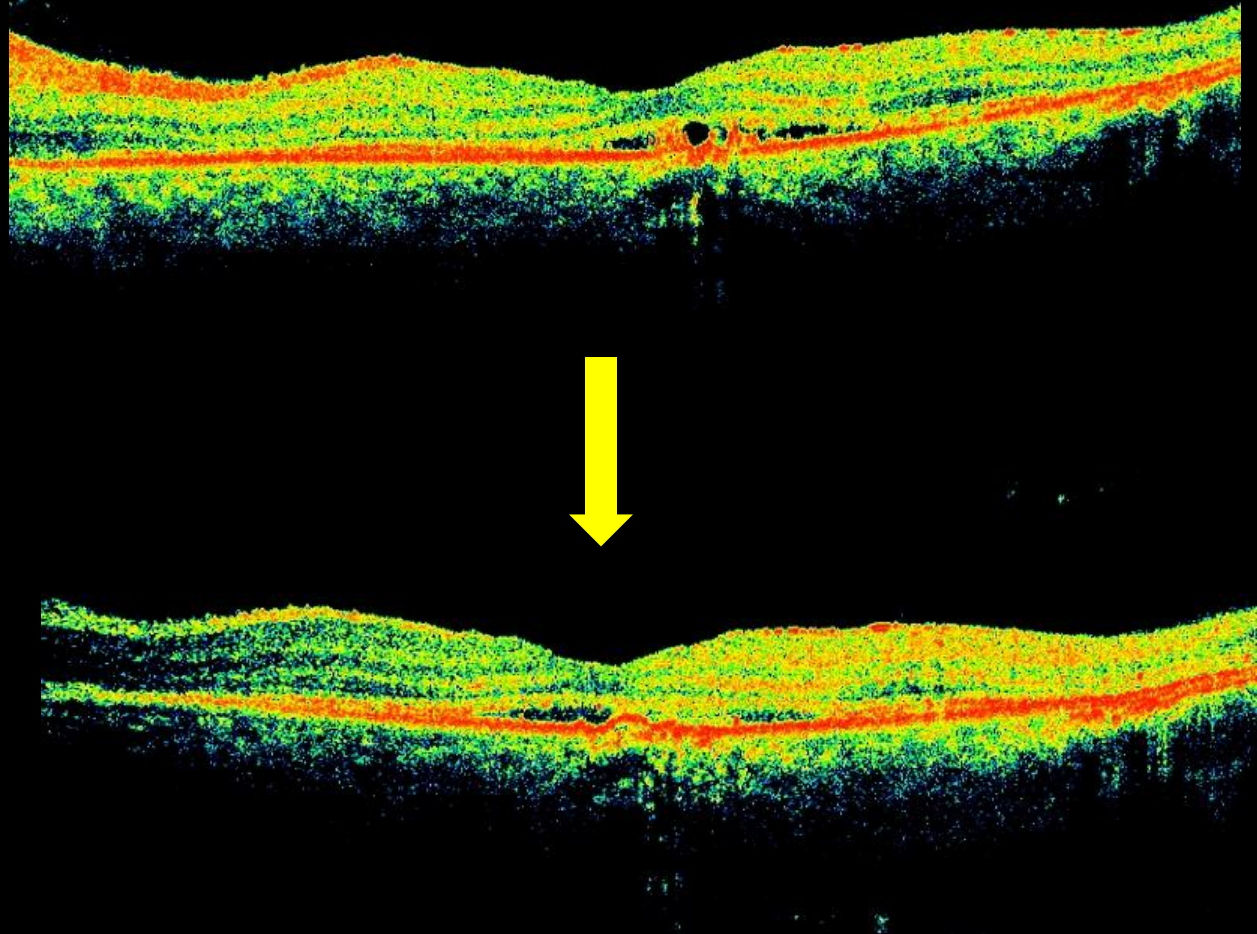
34 yo male,  
recurrent CSCR  
treated with laser  
earlier



Nov 2013  
Treated with laser



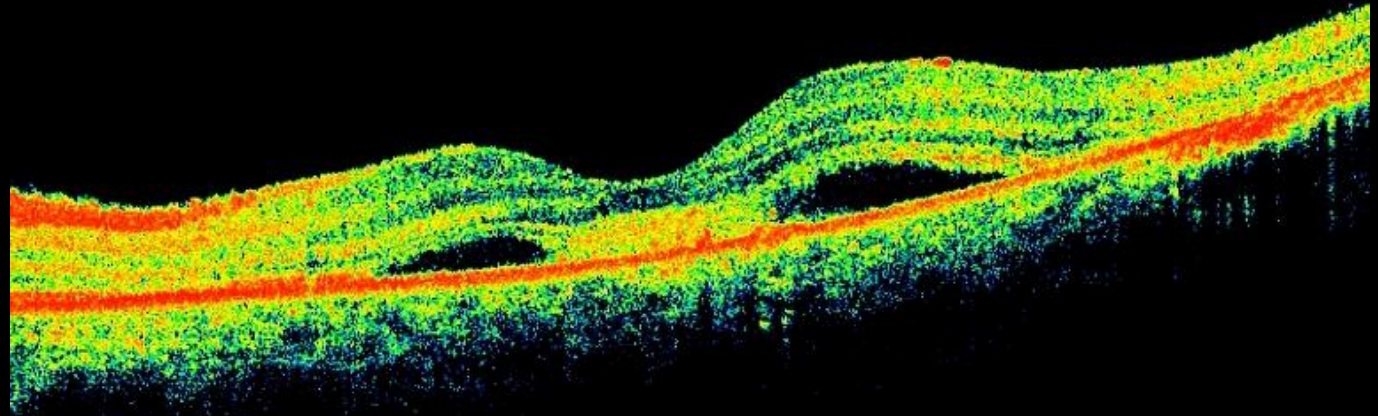
Dec 2013, 1 month post-laser  
Marginal visual and structural improvement



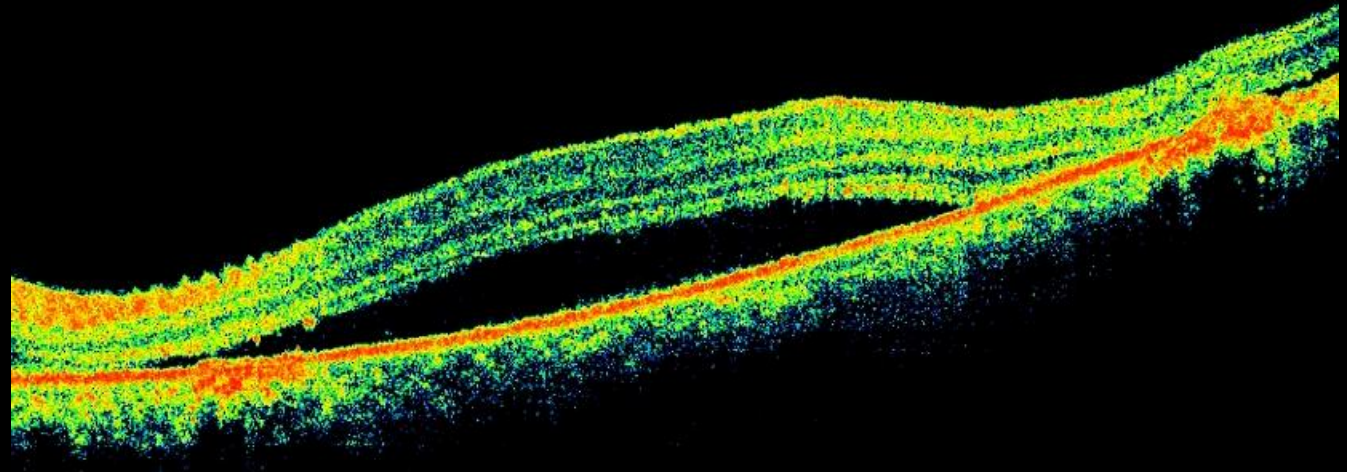


LE Jan 2014  
2 months after laser

Foveal  
centre



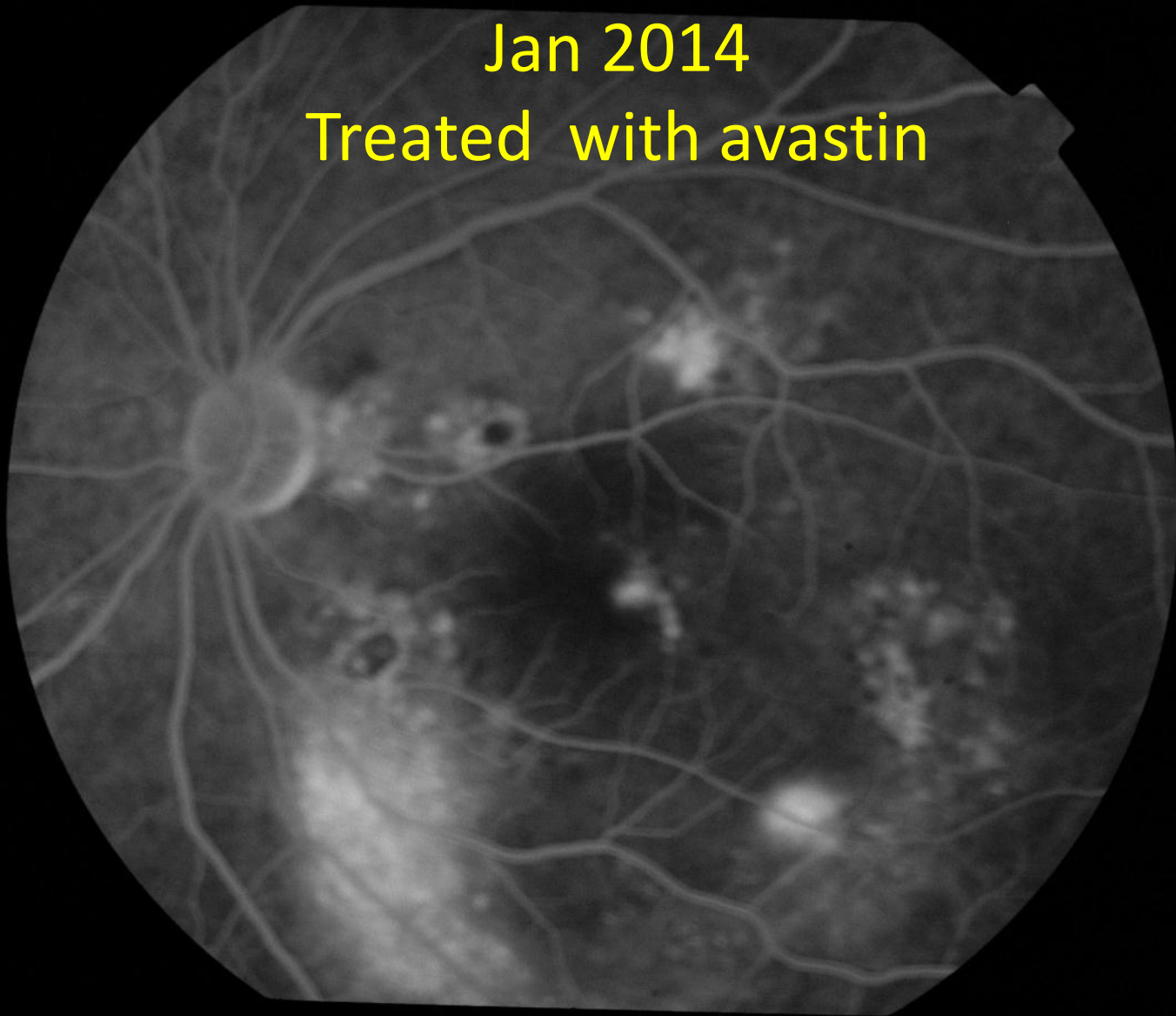
Inferior retina



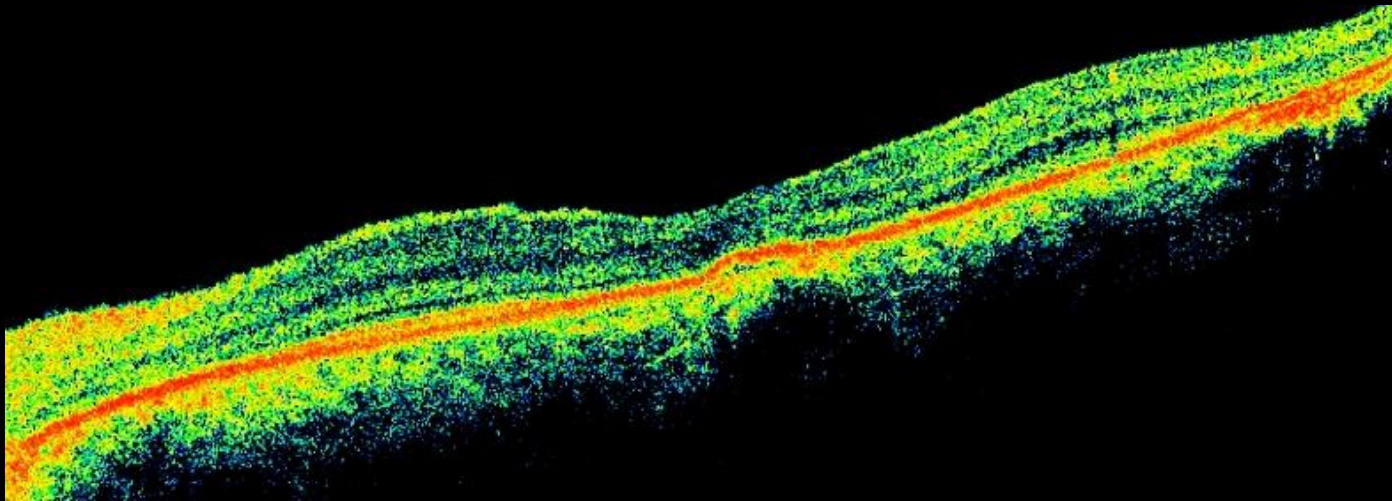


Jan 2014

Treated with avastin

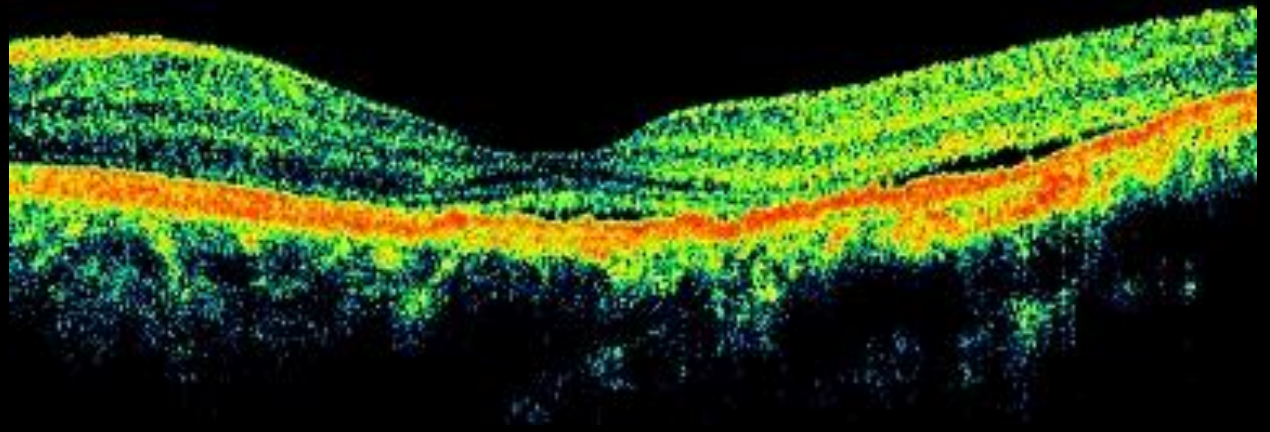
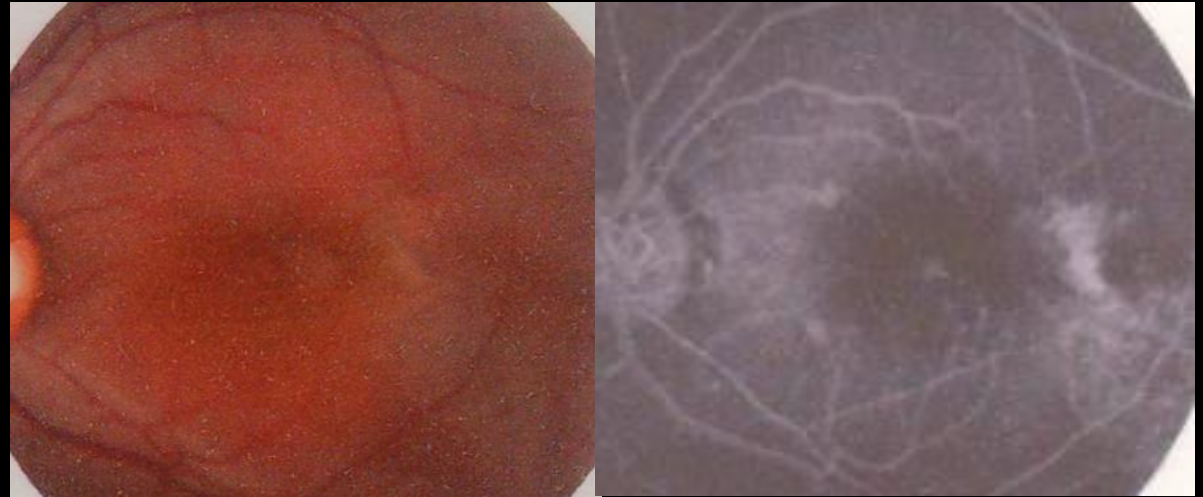


LE Apr 2014  
2 months after avastin



## Case. Jan 2012

- 42 yo male
- Symptoms > 1 year
- VA LE 20/25

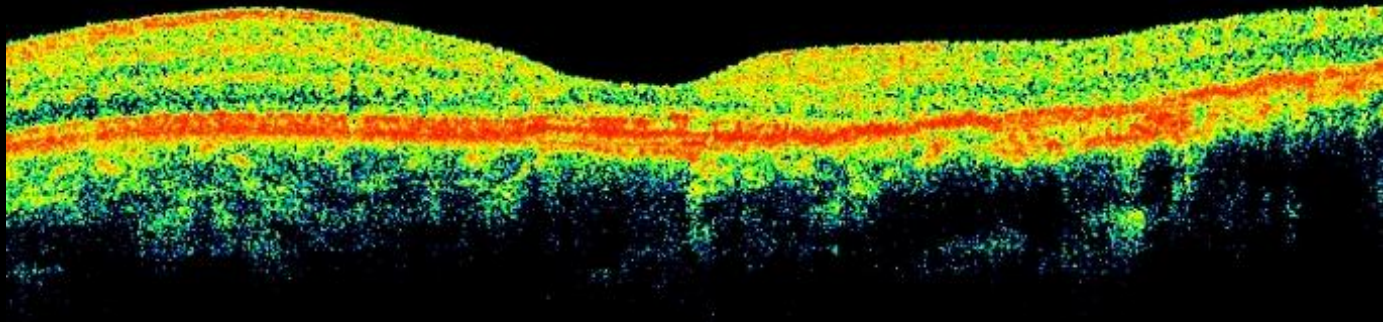




Treated with avastin

February 2012

Fluid Resolved completely at 4 weeks with no recurrence



## Other options for chronic CSCR

- ICG guided Transpupillary Thermotherapy
- Aspirin 75-100 mg/day
- Finasteride 5 mg daily indefinitely
- Rifampicin 300 mg bid
- Mifepristone 200 mg daily for 3 months
- Methotrexate 7.5 mg weekly

# Other options for chronic CSCR

## Anecdotal reports

- Ketoconazole 400 mg/day
- Beta blockers: Propranolol & Labetalol
- Subthreshold Non-visible Micropulse yellow laser
- H. pylori Treatment
- Obstructive Sleep Apnea Treatment



# Eplerenone

## Mineralocorticoid receptor blocker

- Tongalp Tezel, MD, ASRS 2014
- At 17 weeks, it was found that 4/9 eyes (44%) had resolution of subretinal fluid
- Most effective if given < 9 weeks from onset of symptoms
- CSCR can recur after cessation of eplerenone

# Conclusions

- Atypical CSCR is a continuum of potentially blinding challenging situations
- Response to therapy is variable
- There is need for more effective therapeutic options for this complex macular condition

Thank You!