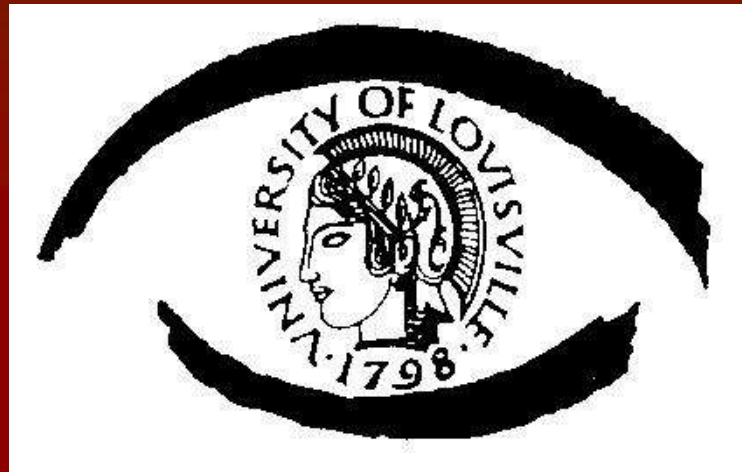


Grand Rounds



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Subjective

CC: A 50 yo WF complains of decreased vision in left eye for the last 2 years.

HPI: She complains, that she has a big blind spot in the left eye since 2 years, no eye pain or flashes of light, nor floaters.

POH: LASIK.

PMH: None.

Meds: None.

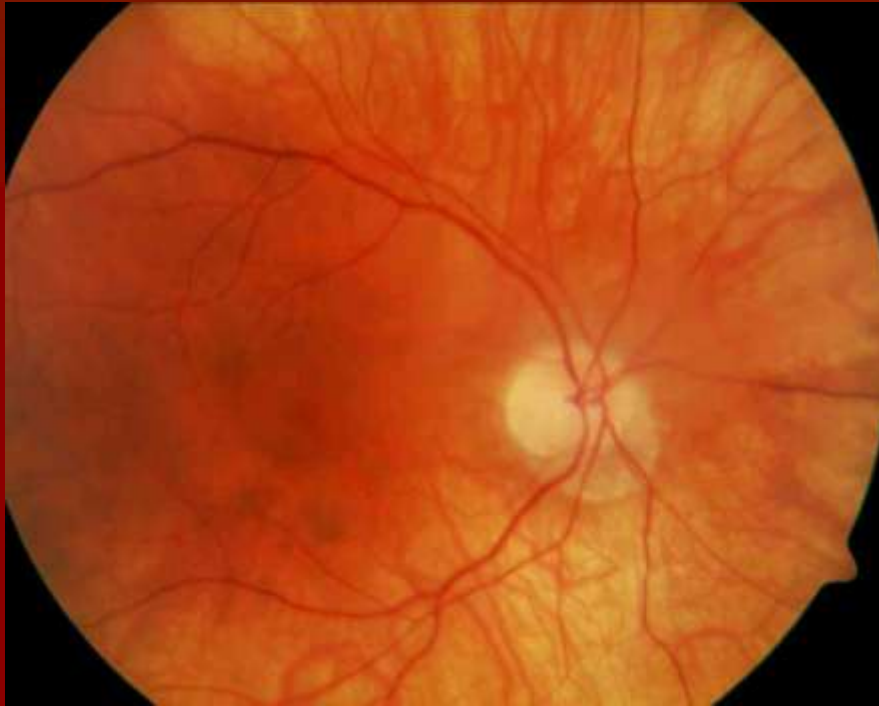
Allergies: Morphine.

Social h/o: Non-contributory

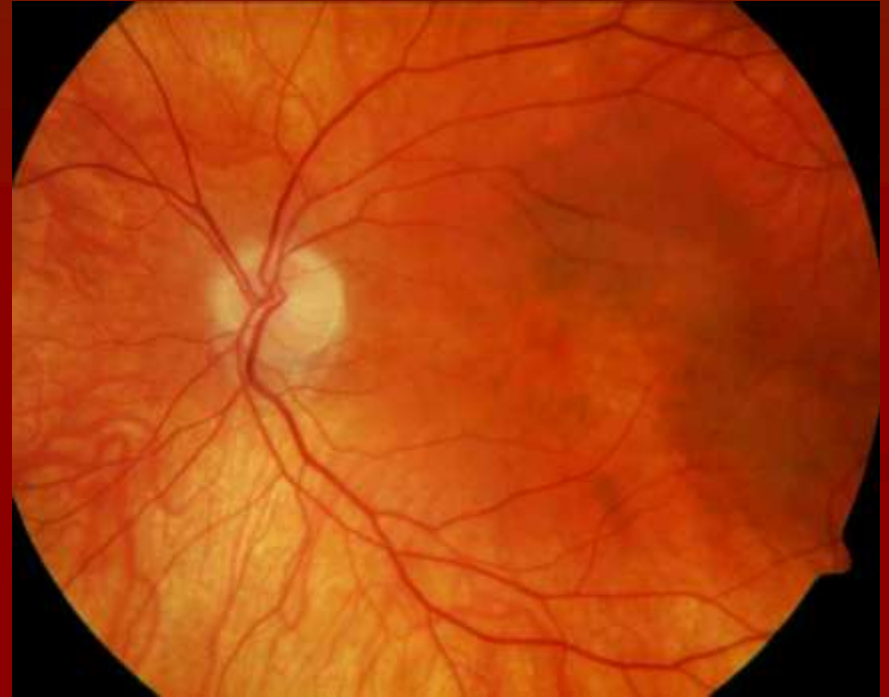
Objective

	<u>OD</u>	<u>OS</u>
■ BCVA:	20/20	20/40
	■ -1.25 + 0.75 X 100	
	■ -0.50 + 0.25 X 115	
■ EOM:	Full OU	
■ Pupils:	No RAPD OU	
■ Ant Seg:	Mild NS OU	
■ IOP:	16 mm Hg	14 mm Hg
■ DFE:	Possible choroidal hemangioma OS	

Fundus Photo



OD

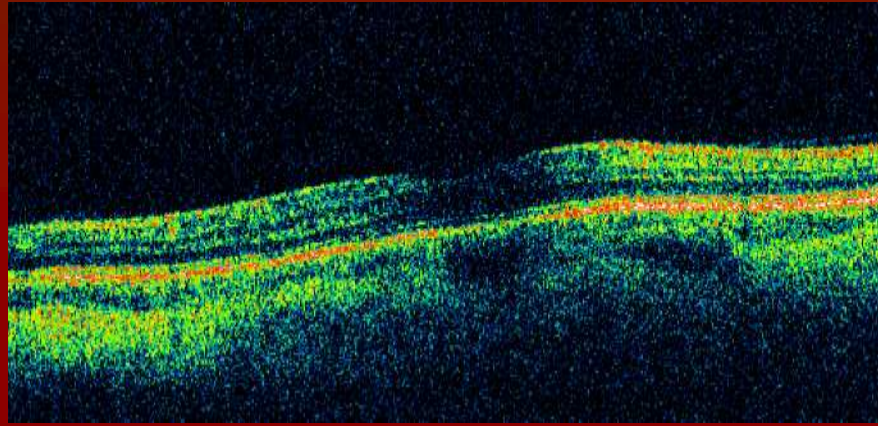


OS

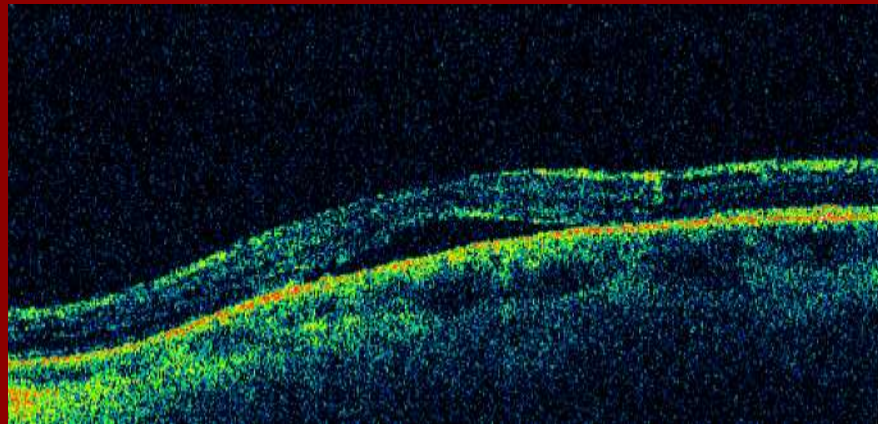
Left colored choroidal mass approximately 1.5 mm in diameter, and an overlying serous detachment of the sensory retina OS.

OCT

OD

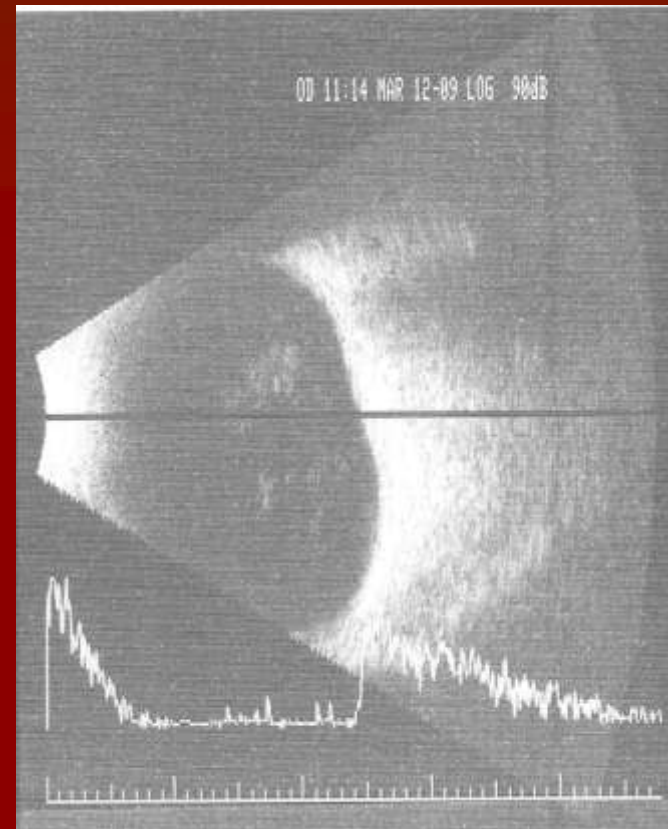
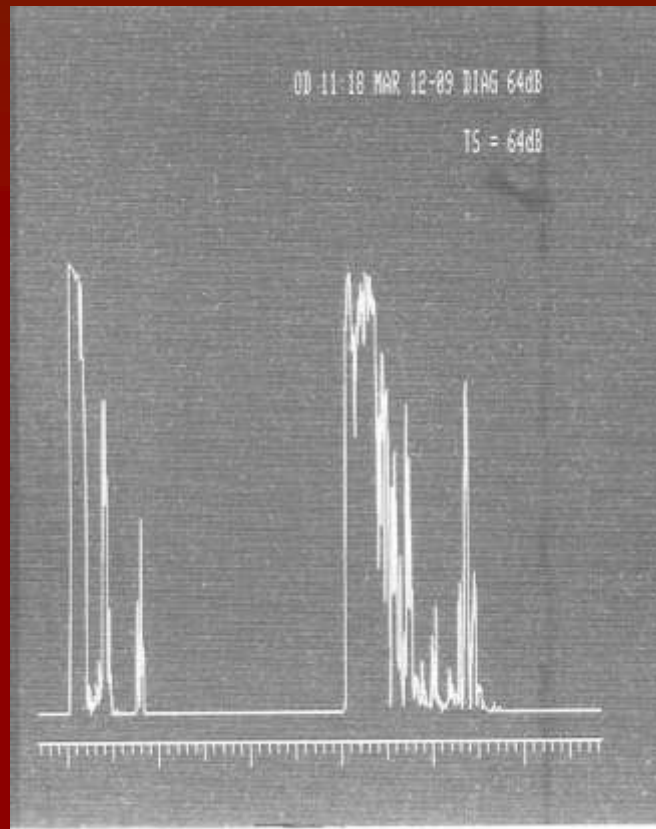


OS



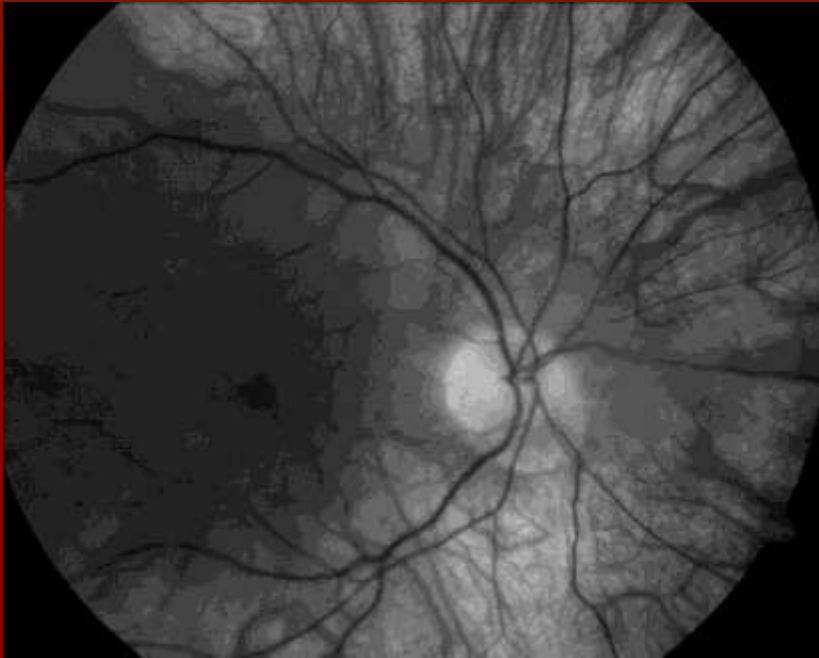
OD– WNL, OS-- Serous detachment of the sensory retina.

Ultrasound

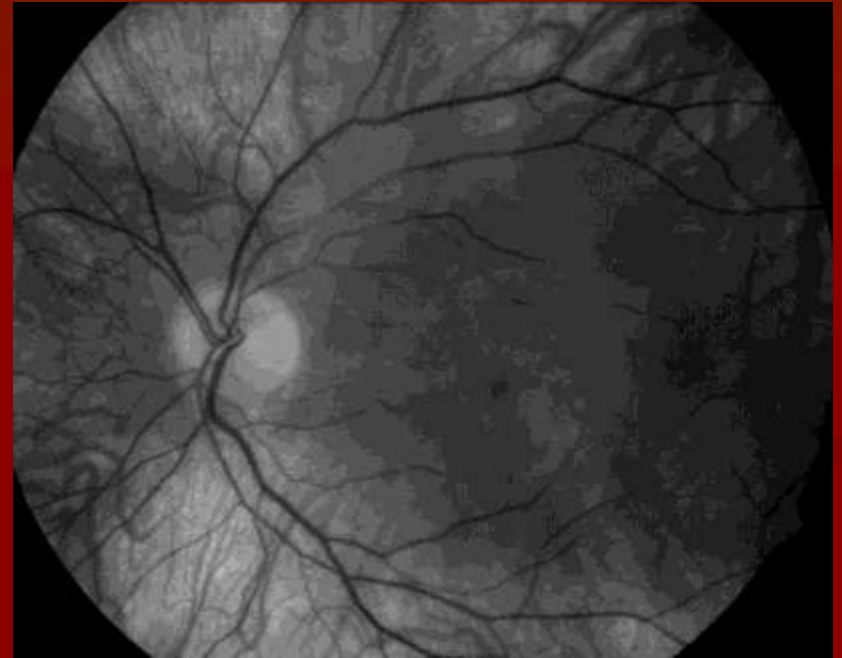


Left panel – A scan, Right panel -- B and A scan combined. Both panels showing high internal reflectivity spikes indicating the heterogeneous composition of the lesion, and circumscribed thickening of the choroid.

Red free photos



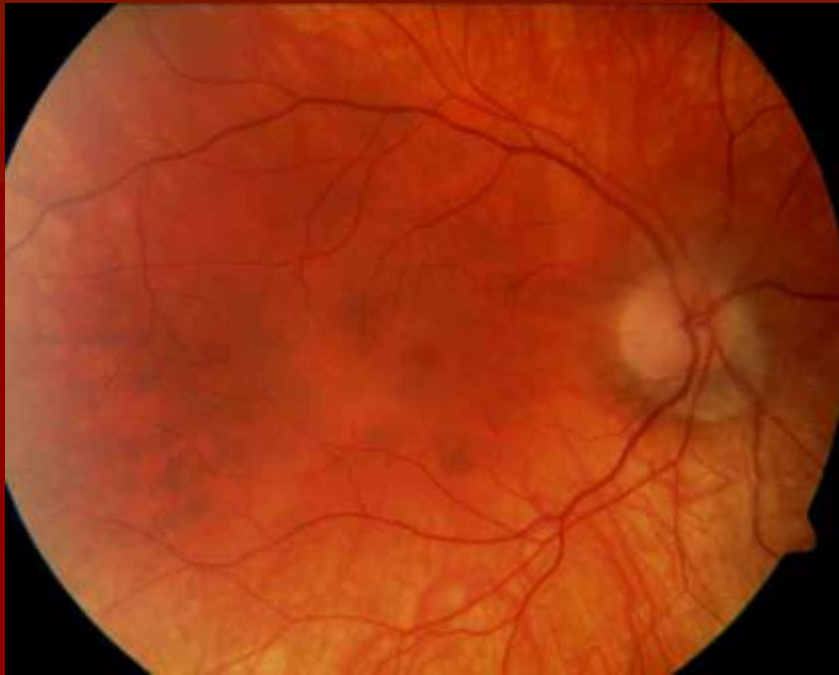
OD



OS

OS - confluence of autofluorescence within the macula suggesting subretinal fluid/heme .

Fluorescein Angiogram (FA)



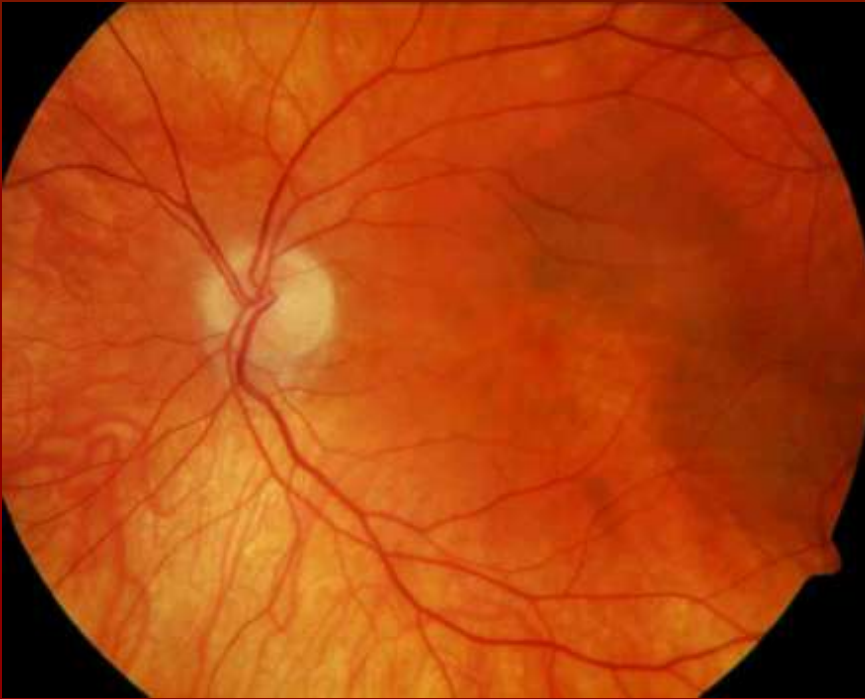
OD



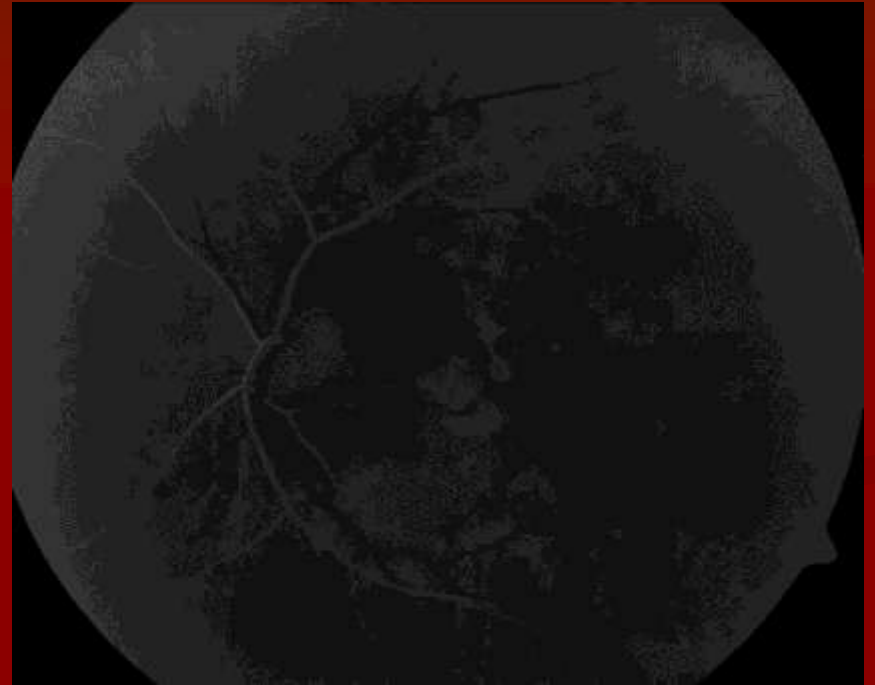
OD

Recirculation phase – OD , WNL.

FA



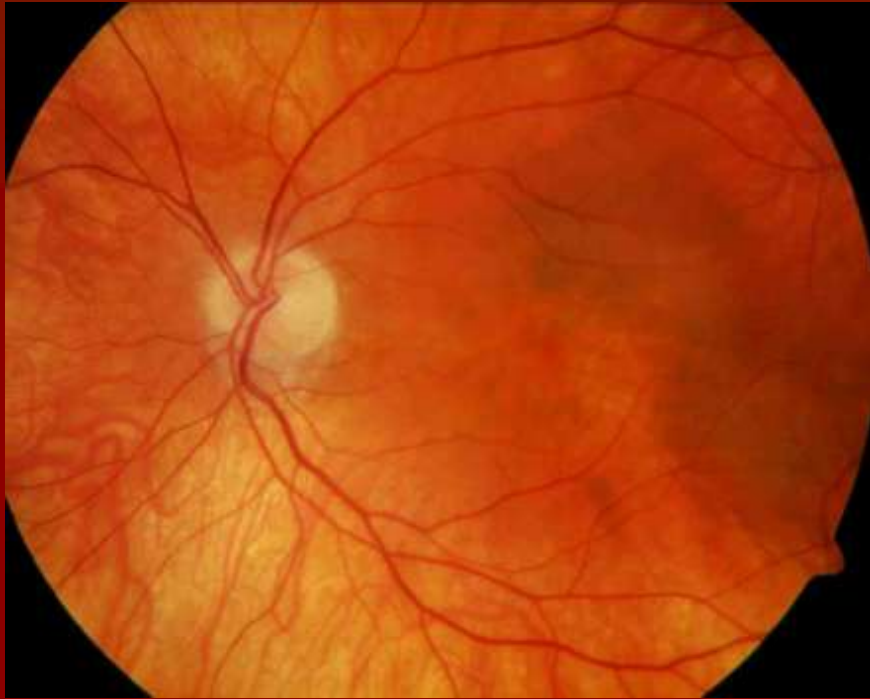
OS



OS

Arterial phase - OS, showing mottled hyperfluorescence within the macula.

FA



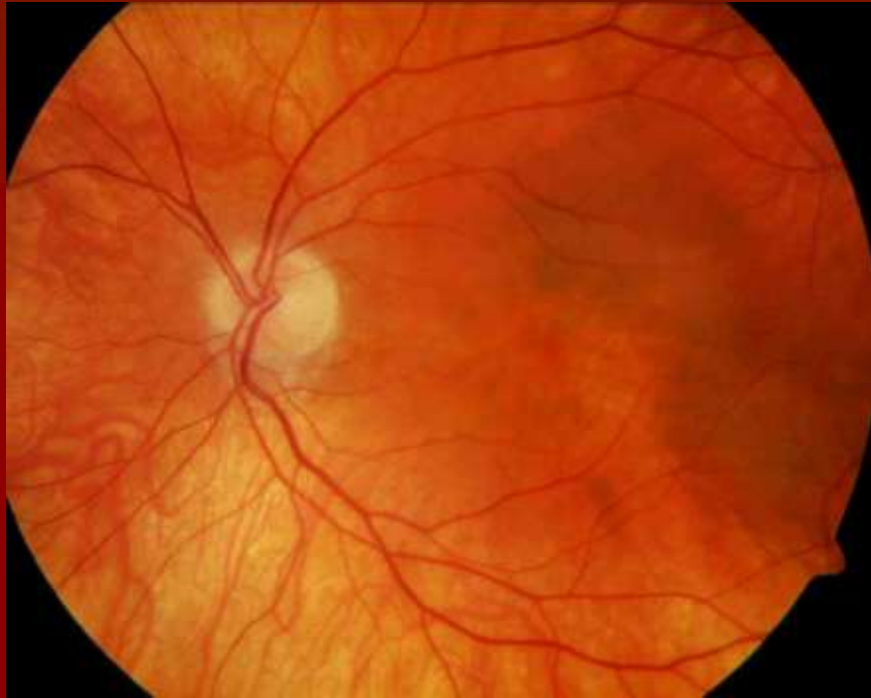
OS



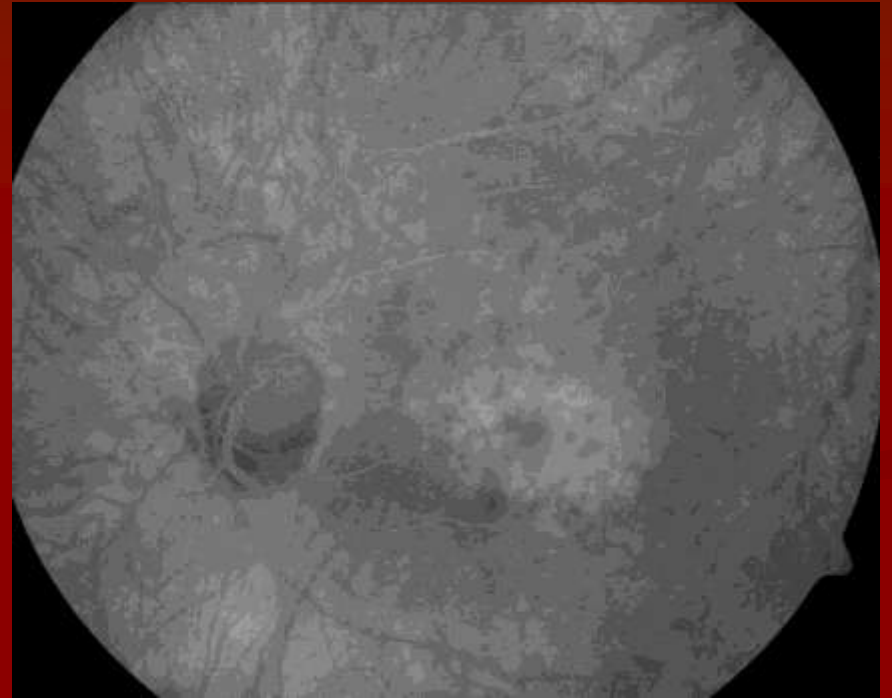
OS

Early AV phase - OS, showing mottled pattern of fluorescence that becomes more hyperfluorescent.

FA



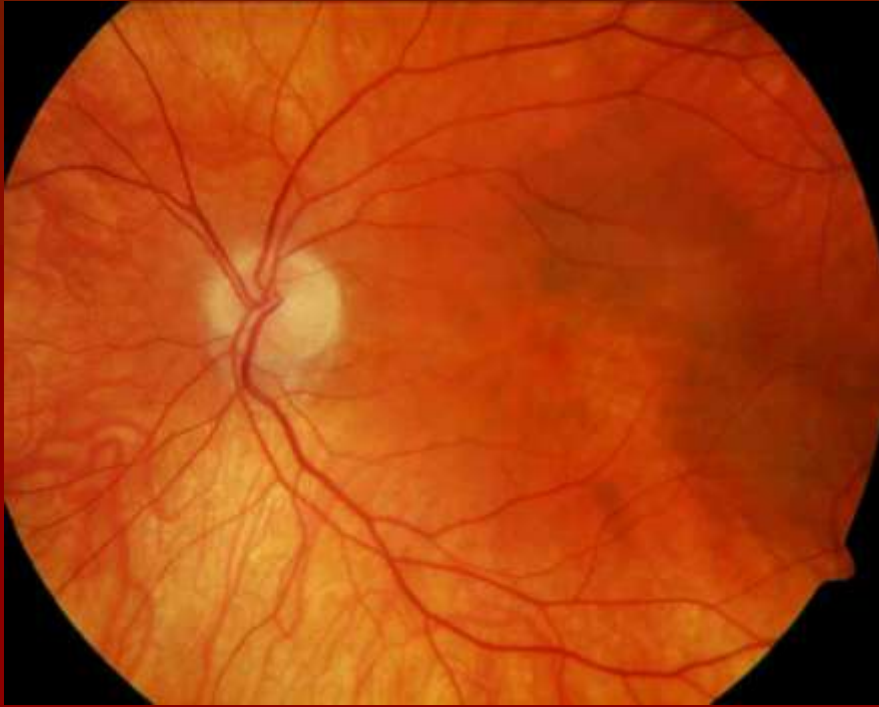
OS



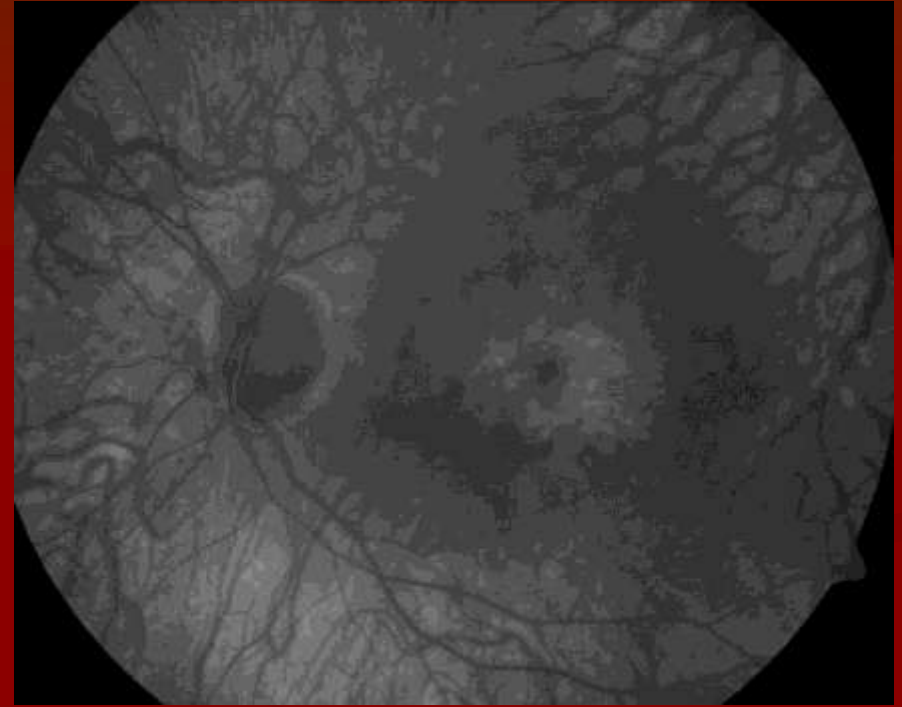
OS

Late venous phase – OS, showing mottled pattern of fluorescence that becomes more confluent and leaking in the macula.

FA



OS



OS

Late phase – OS, showing "coarse vascular pattern" compartmentalized accumulation of dye occurs in the outer retina

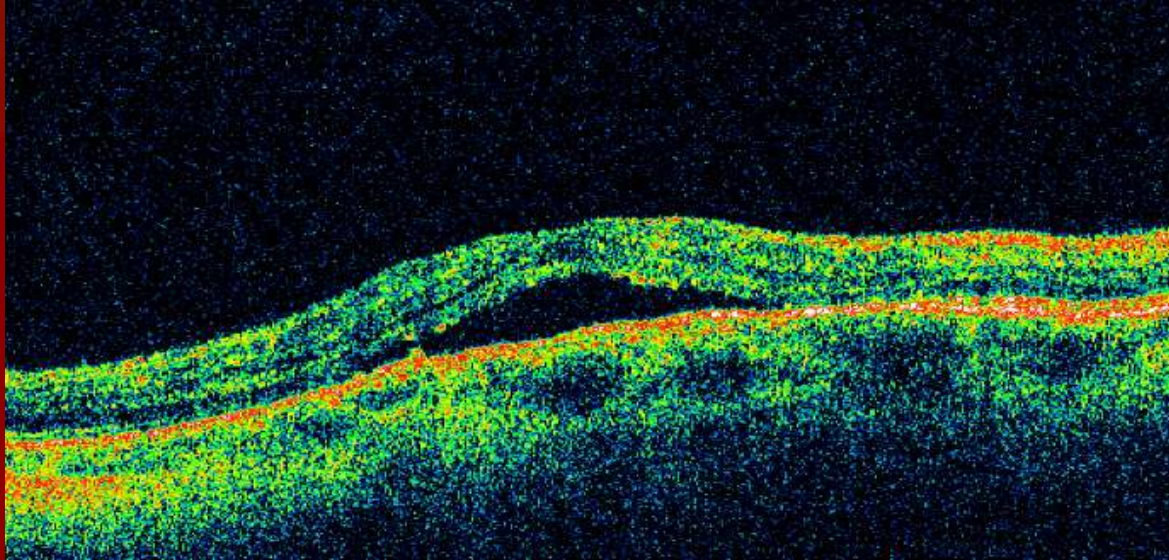
Assessment/Differential Diagnosis

- A 50 yo WF with an FA, OCT, ultrasound and fundus examination consistent with Circumscribed choroidal hemangioma OS.
- DDX:
 - **Circumscribed Choroidal Hemangioma (CCH)**
 - Metastatic choroidal tumor
 - Choroidal melanoma
 - amelanotic or otherwise (depending on the pigmentation of the lesion)
 - Choroidal osteoma
 - Central serous chorioretinopathy
 - Choroidal granuloma

9 months later

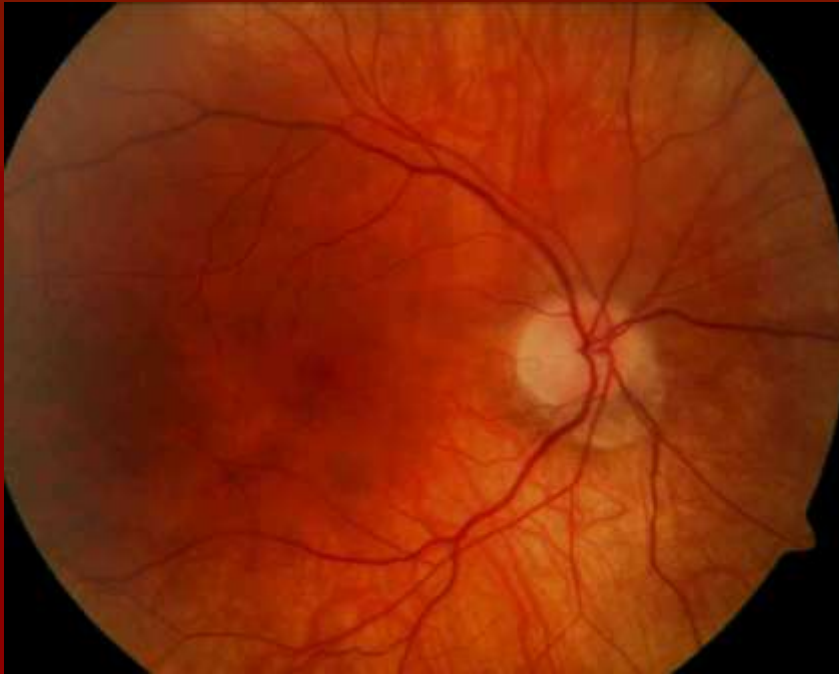
	<u>OD</u>	<u>OS</u>
■ BCVA:	20/20	20/40
	■ -1.25 + 0.75 X 100	
	■ +0.50 + 0.25 X 115 (Hyperopic Shift)	
■ EOM:	Full OU	
■ Pupils:	No RAPD OU	
■ Ant Seg:	Mild NS OU	
■ IOP:	15 mm Hg	15 mm Hg
■ DFE:	Choroidal hemangioma OS	

9 months later – OCT



OS-- Serous detachment of the sensory retina

1 month post Photodynamic therapy (PDT)



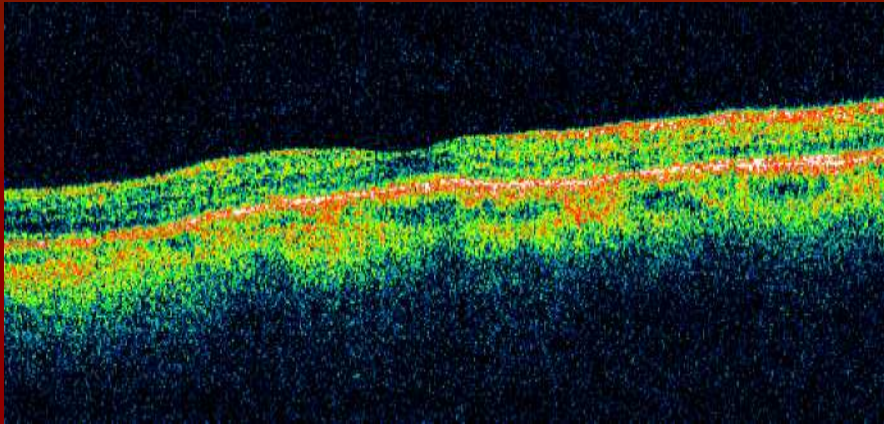
OD



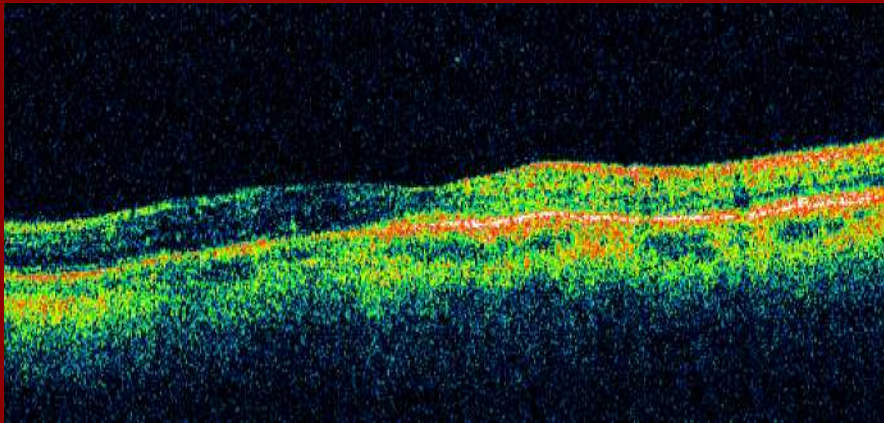
OS

OD – WNL, OS – regression of the choroidal hemangioma, RPE atrophy and resolution of subretinal fluid.

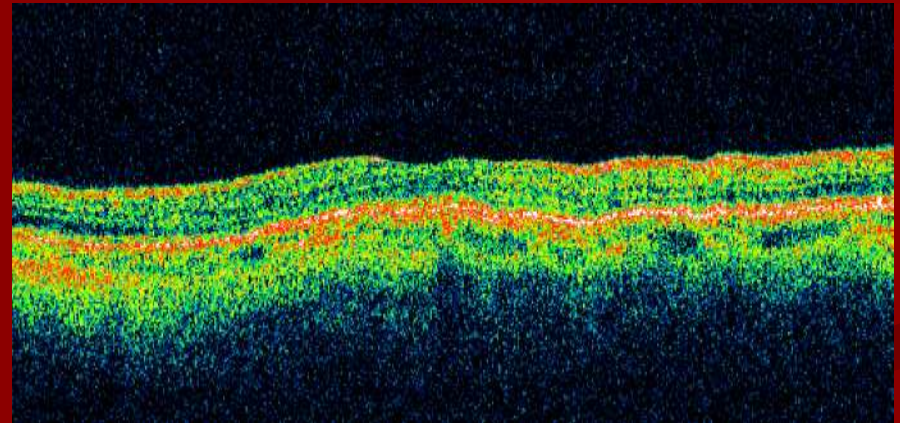
OCT post PDT Treatment OS



1 month post PDT treatment OS
BCVA 20/40 OS

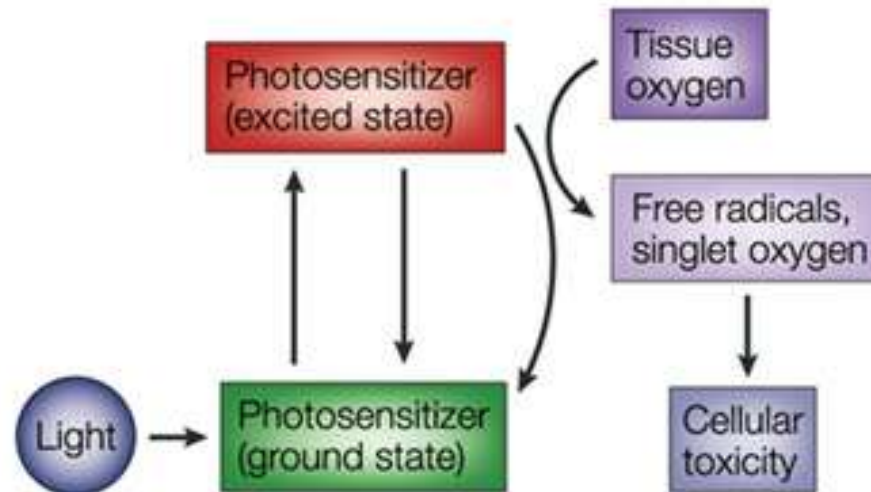


3 month post PDT treatment OS
BCVA 20/40 OS



9 month post PDT treatment OS
BCVA 20/40 OS

Photodynamic Therapy (PDT)



Verteporfin in PDT

- Verteporfin is encapsulated in liposomes making it a lipophile and able to bind LDL in the blood plasma. LDL-bound verteporfin enters cells through the LDL receptor by receptor-mediated endocytosis.
- Fast-growing cells, such as tumor cells and neovascularizations, accumulate more verteporfin than normal cells by selective extravasation because of leaky vasculature, providing high target specificity and negligible adverse effects to normal tissues.

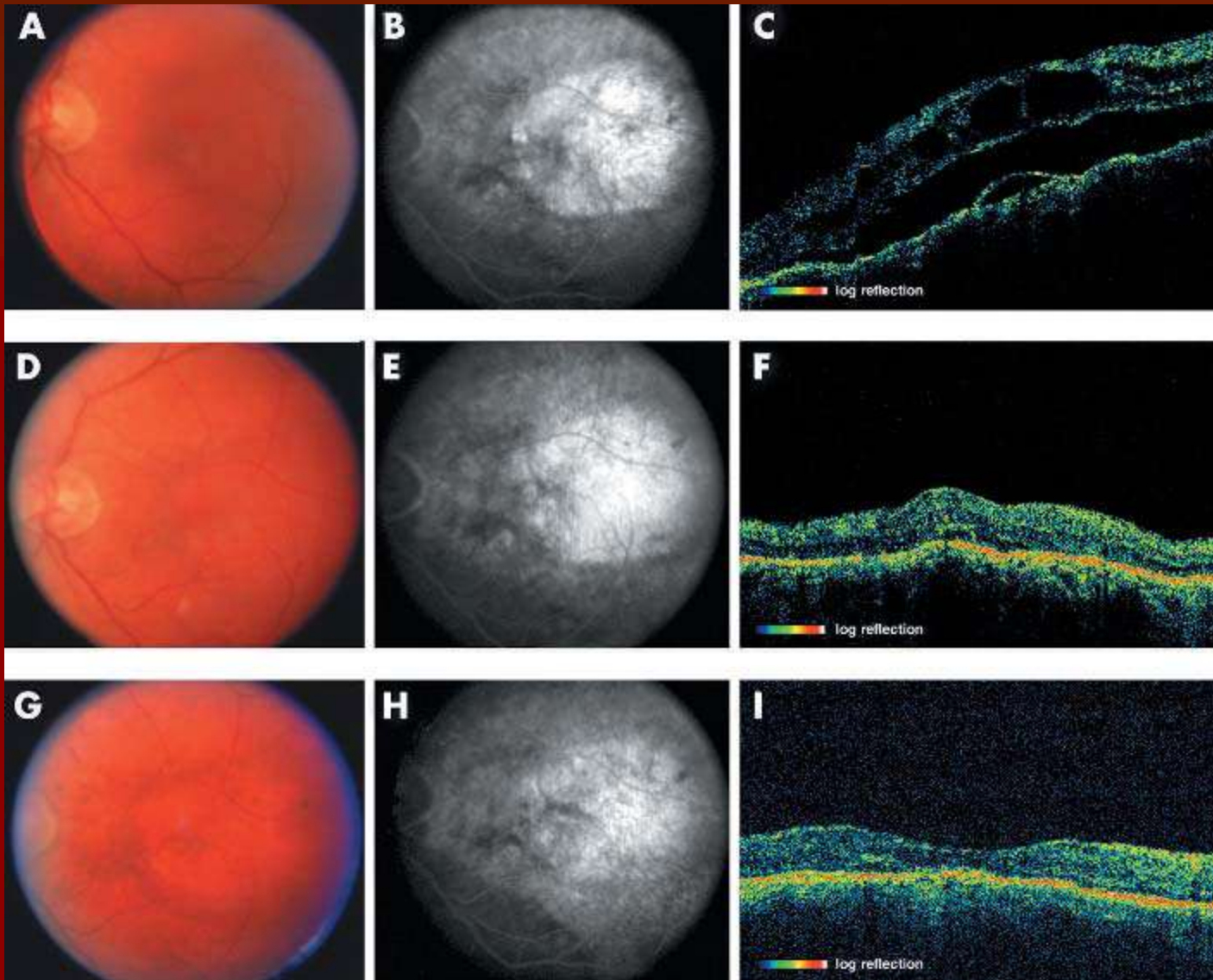
Choroidal Hemangioma Treatment

- Laser photocoagulation, cryotherapy, external beam radiotherapy, stereotactic radiotherapy, proton beam radiotherapy, episcleral plaque radiotherapy, and transpupillary thermotherapy (TTT).
- These treatments are associated with the potential risk of damage to the overlying retina.

Verteporfin in PDT

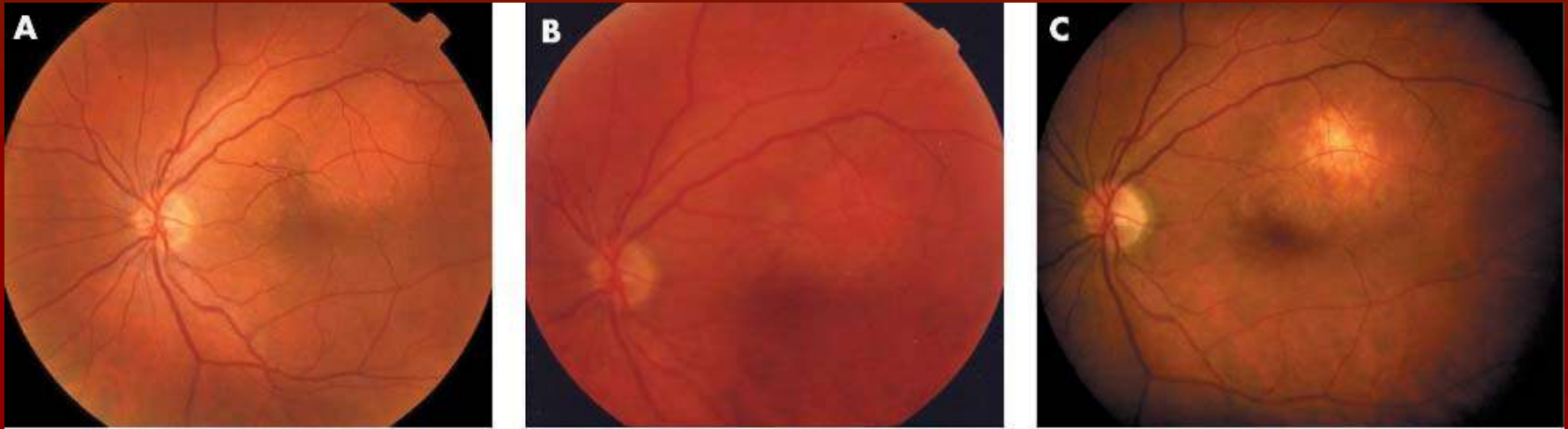
- Verteporfin accumulates rapidly in vascular endothelial cells, choroid, pigmented retina, and photoreceptor outer segments but only negligibly in cornea, lens, or vitreous.

PDT in Choroidal Hemangioma



Colour photographs, Midtransit phase fluorescein angiograms, and linear 6 mm optical coherence tomography scans through the fovea of patient 10 at baseline (A, B, C), 3 months following first session (D, E, F), and 3 months following second session (G, H, I) of ocular photodynamic therapy showing improvement in retinal thickening, leakage, and foveal contour.

PDT in Choroidal Hemangioma



Fundus photograph of the left eye (patient 7) showing a circumscribed choroidal haemangioma before photodynamic therapy (A). The visual acuity was 20/100. Three months following photodynamic therapy the tumour had regressed and visual acuity was 20/30 (B). At 12 month follow up, an area of choroidal atrophy is evident with reduction of visual acuity to 20/100 (C).

Is there a role for Avastin ??

- Case of recurrent CCH with prior photocoagulation that improved clinically after intravitreal bevacizumab
- Two cases of CCHs that showed visual and clinical improvement after combination therapy with intravitreal bevacizumab and PDT.

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- Singh AD, Kaiser PK, Sears JE. Choroidal hemangioma. Ophthalmol Clin North Am. 2005 Mar;18(1):151-61, ix. Review.
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- Sagong M, Lee J, Chang W. Application of intravitreal bevacizumab for circumscribed choroidal hemangioma. Korean J Ophthalmol. 2009 Jun;23(2):127-31.

Thank You!