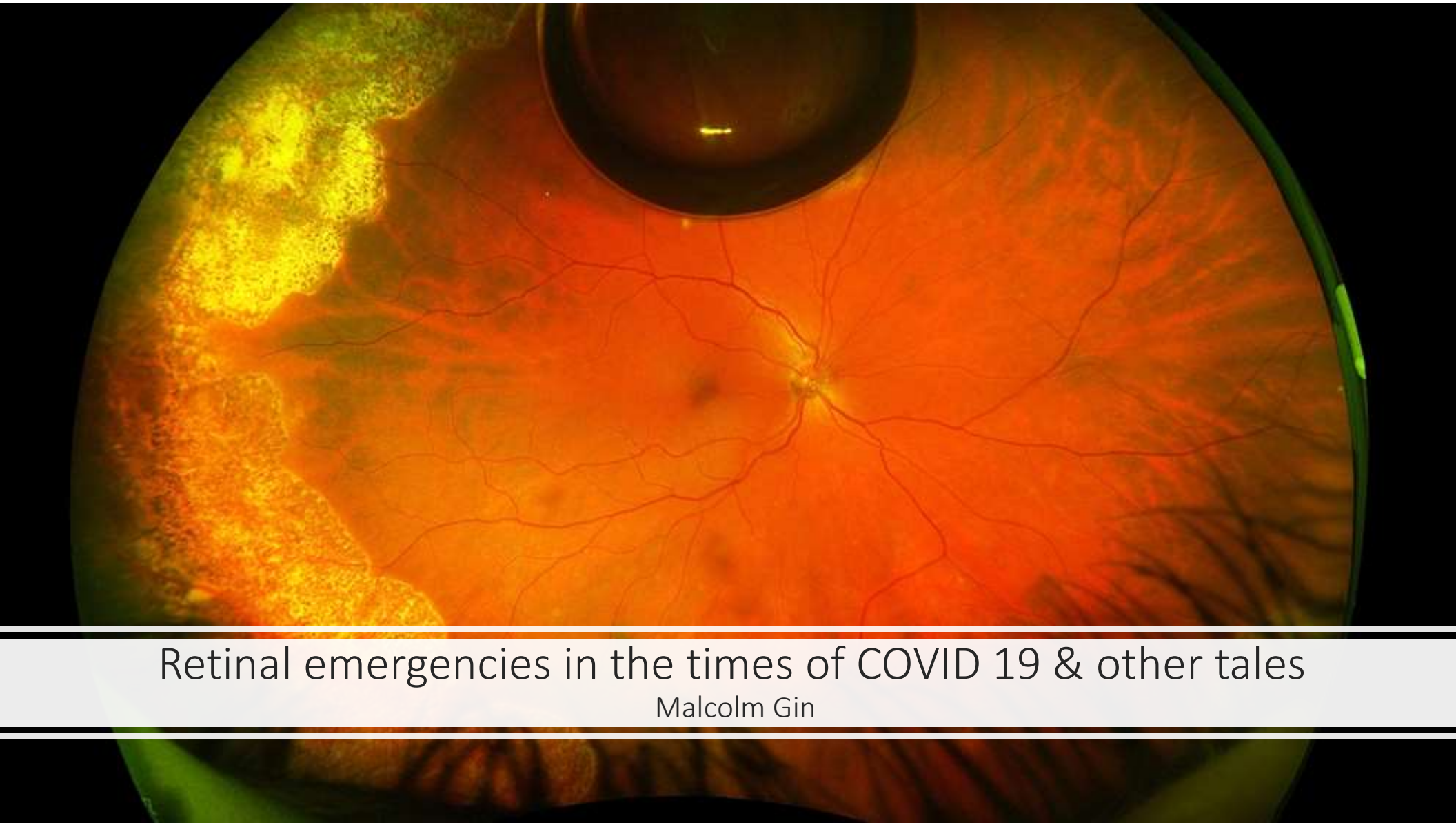
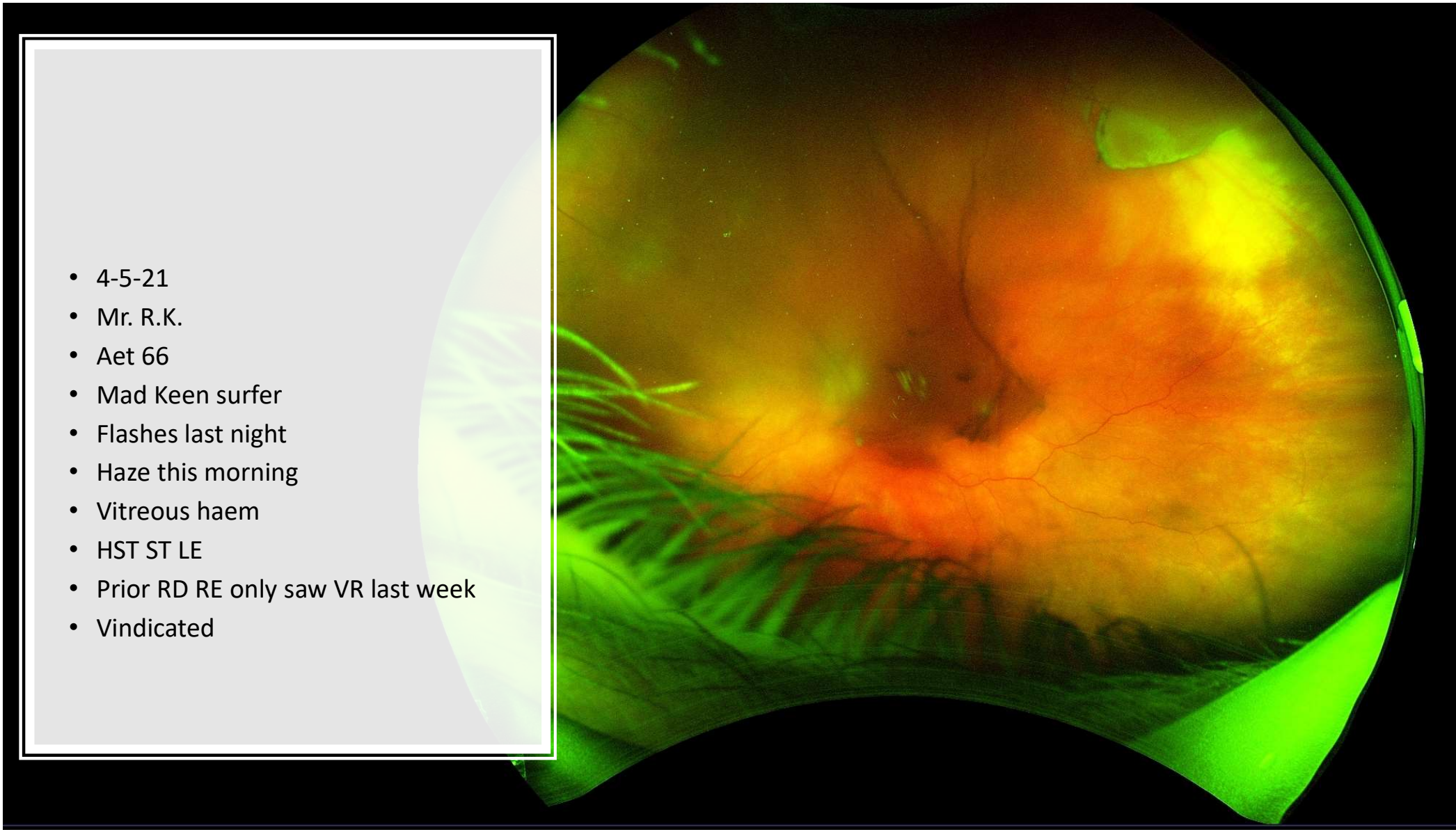


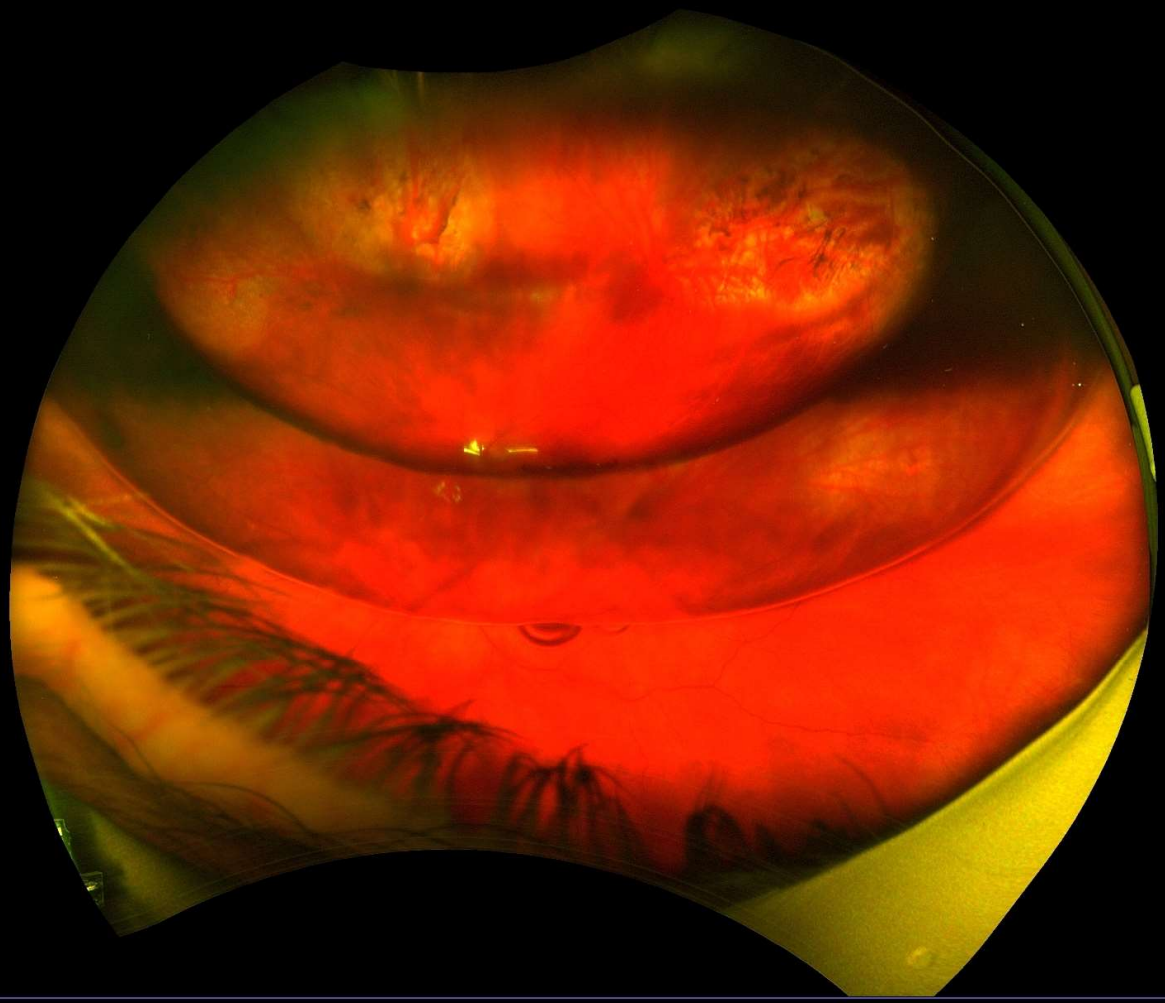
Retinal emergencies in the times of COVID 19 & other tales

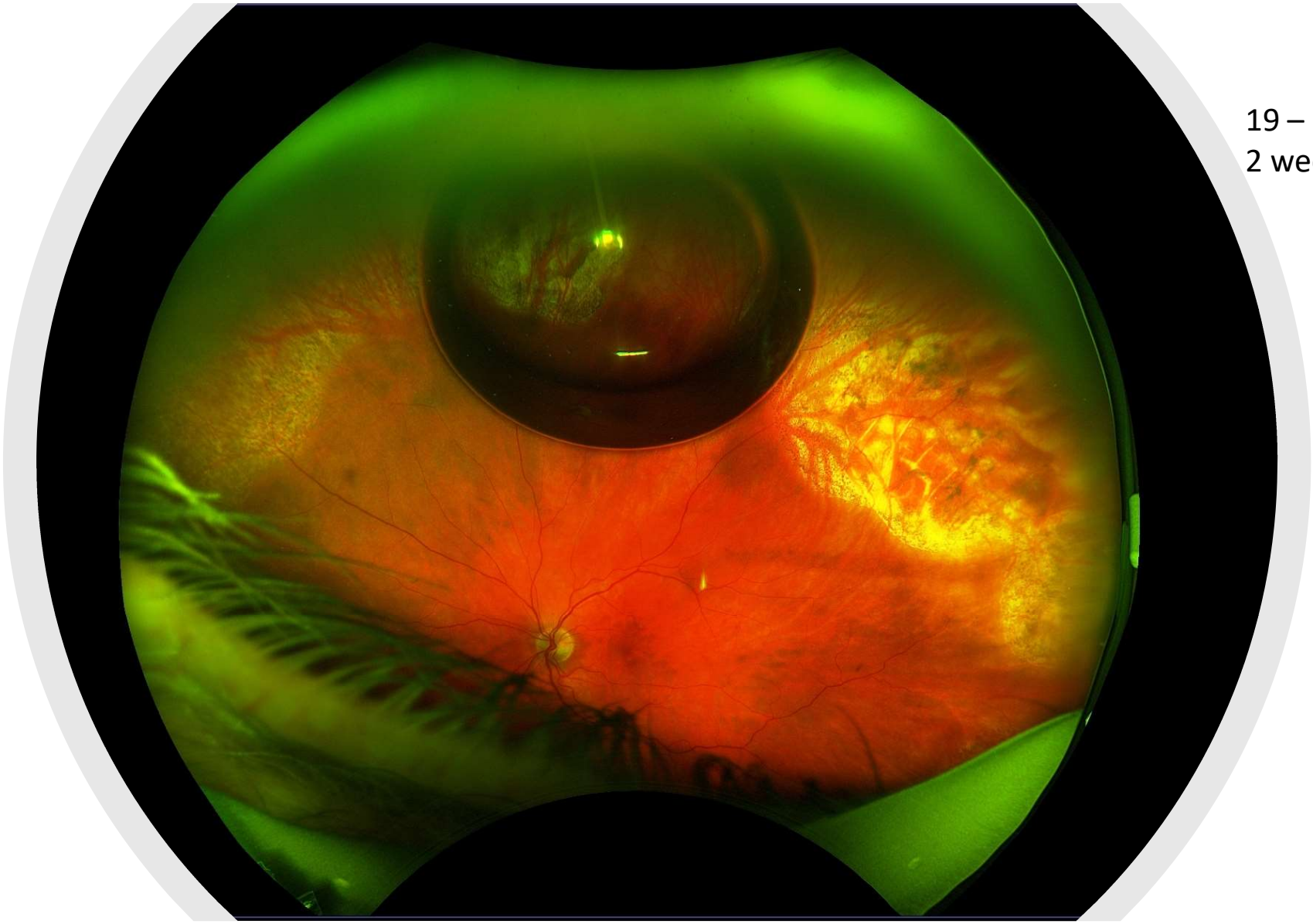
Malcolm Gin

- 4-5-21
- Mr. R.K.
- Aet 66
- Mad Keen surfer
- Flashes last night
- Haze this morning
- Vitreous haem
- HST ST LE
- Prior RD RE only saw VR last week
- Vindicated

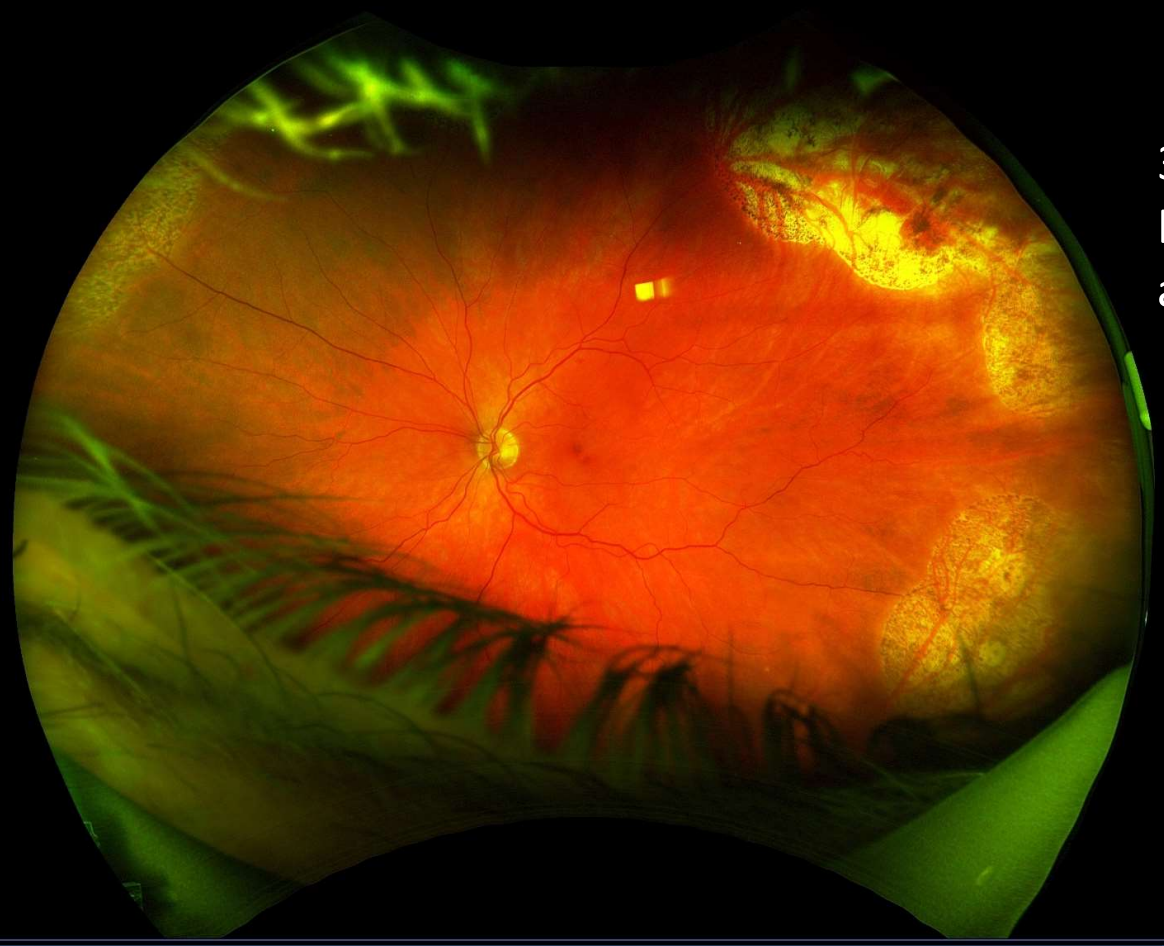


12-05-2021
1 week later
2 superior tears
Face down for 1st hour
Sleep on RHS and face down
No vision IOP check 11 mm Hg





19 – 5- 2021
2 weeks postop

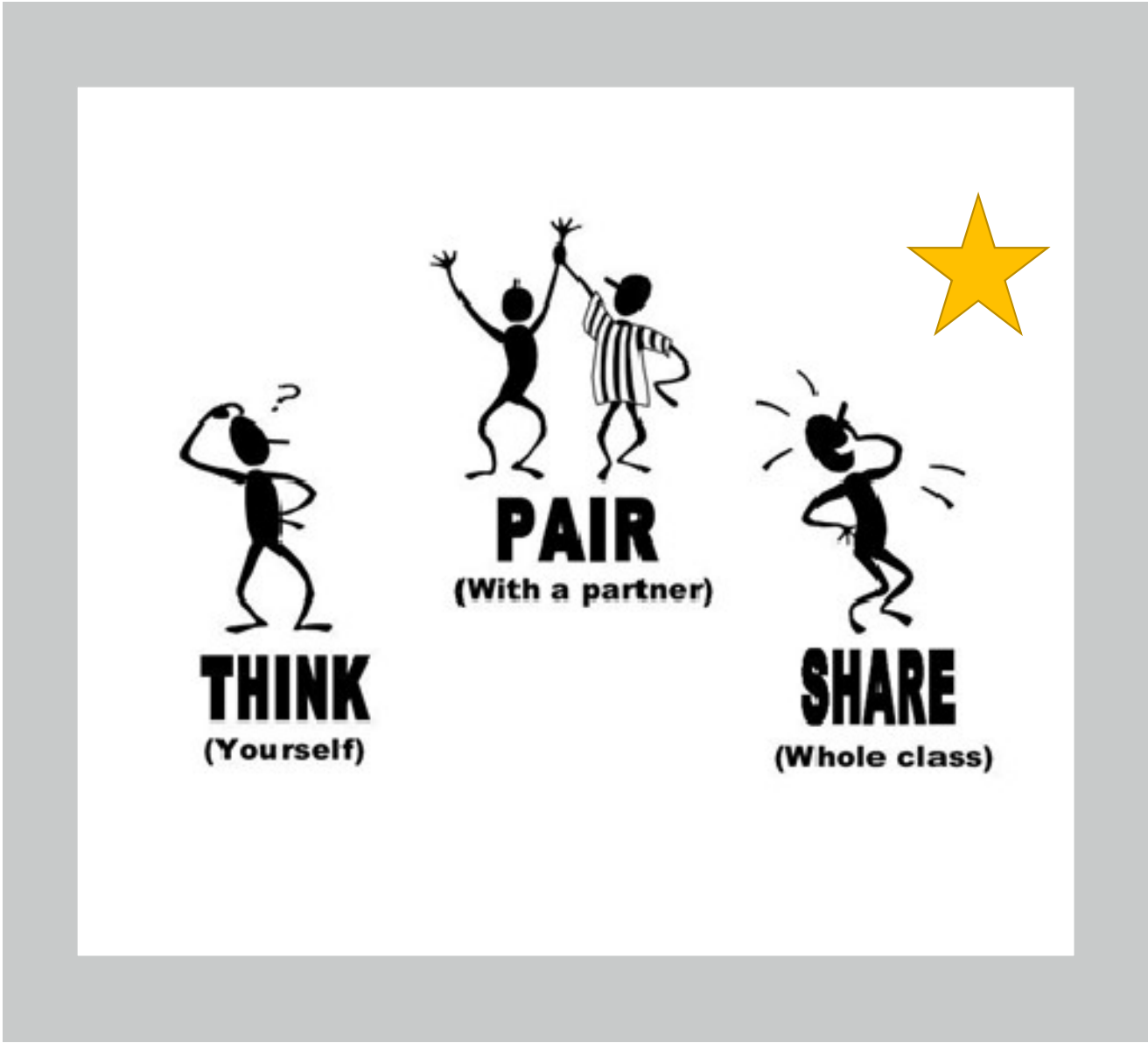


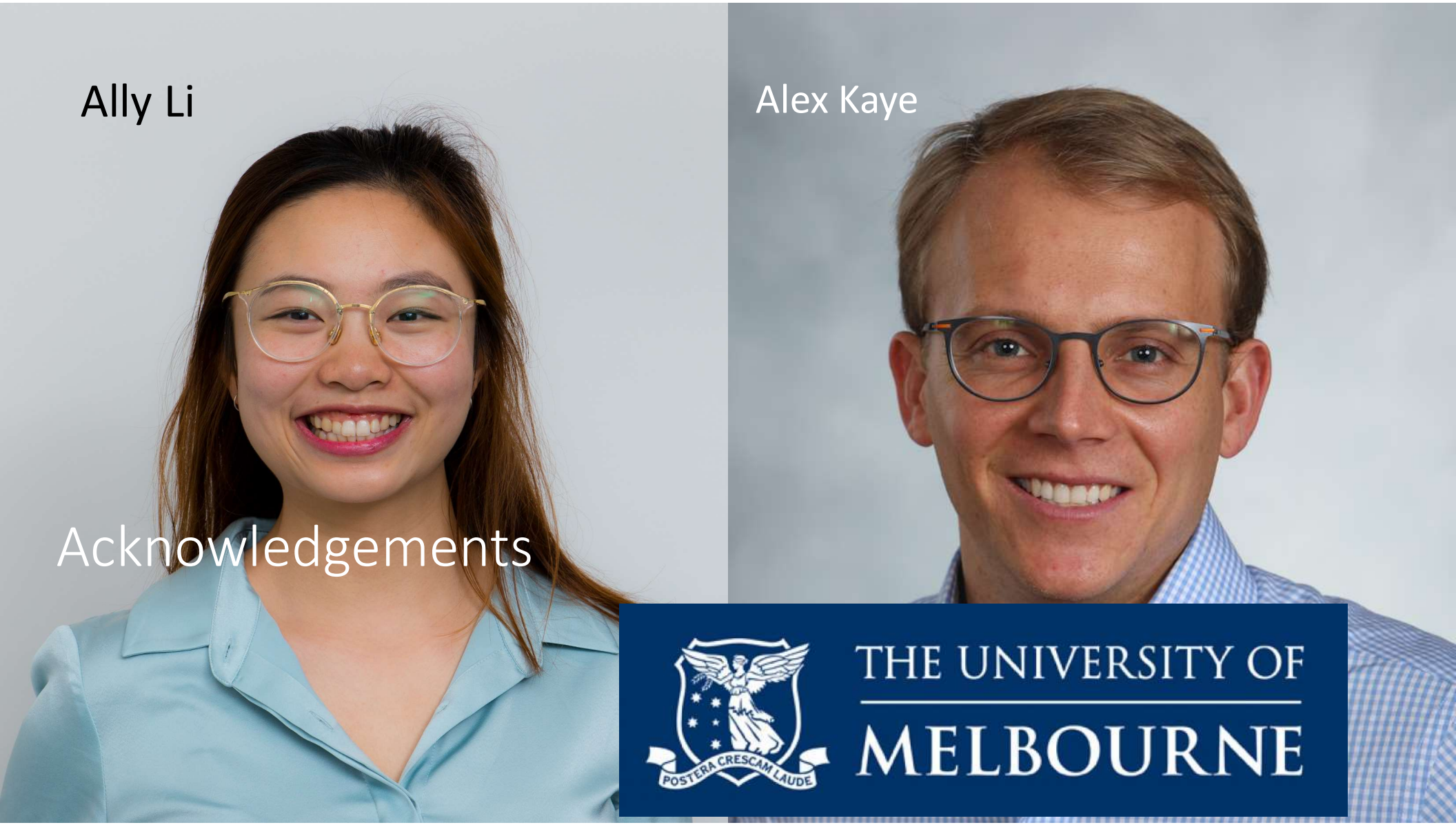
3 weeks later
Bubble fully absorbed

Now off to have cataract Sx in the right eye

Learning Objectives

- 1 Discuss the differences between retinal emergencies and urgencies
- 2 Recognise retinal emergencies and appropriately triage and refer
- 3 Use new imaging technologies to recognise change
- 4 Why not have a Retinal surgeon do this talk?





Acknowledgements

THE UNIVERSITY OF MELBOURNE

Housekeeping

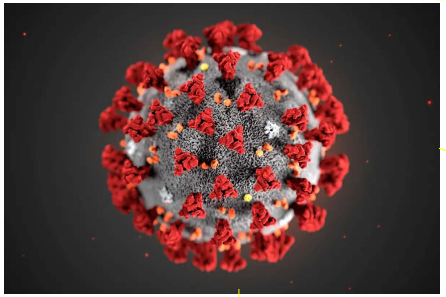
- Case studies
- Framework, interactive
- I am not a retinal specialist
- If you know something, let's share
- If you want to know something, then happy to forward questions on
- My action is not always correct
- I'm looking to learn as well

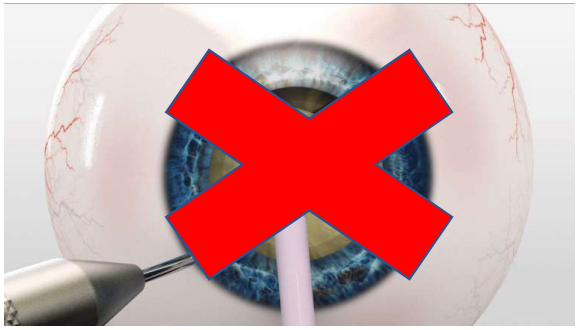
- **Emergency**
- a serious, unexpected, and often dangerous situation requiring immediate action.

The main difference between emergency and urgency is that in emergency there is immediate threat to vision or ocular health whereas in urgency, there is no immediate danger but if not taken care in a given period of time, then the situation may turn into ..

- **Urgency**
- importance requiring swift action.
- Days?


120 days
Victoria
lockdown






E+E
the royal victorian
eye and ear
hospital

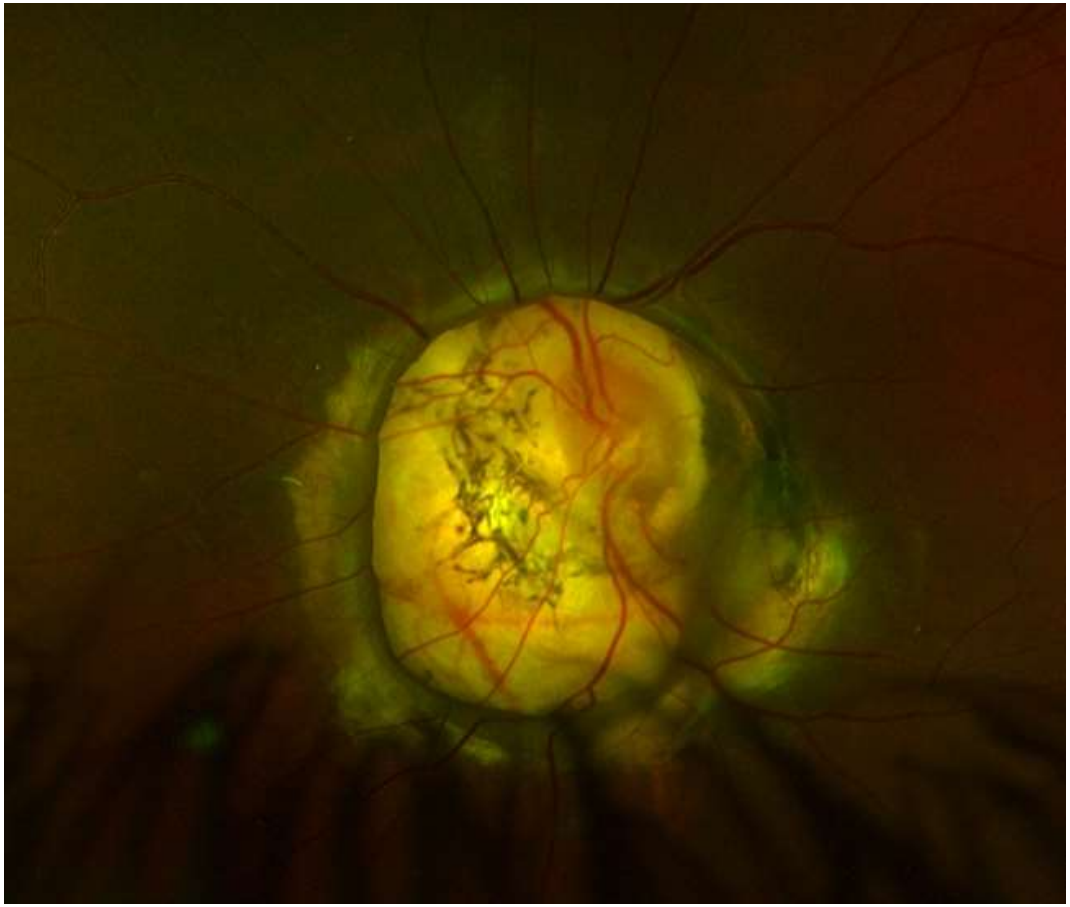

eye specialists

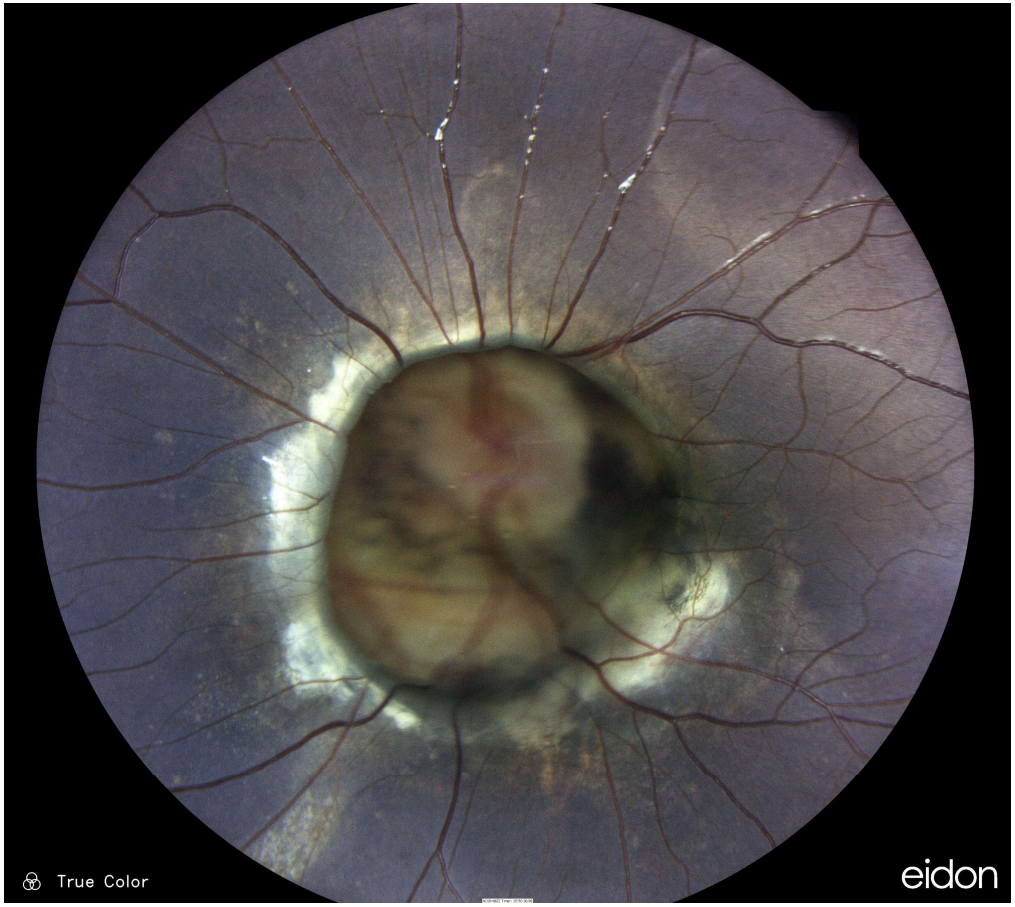
Teaser Miss
N.C. Aet 9

No significant Rx	R 6/6 L 6/120
Strab sx aet 2.5	Patch and drops to no avail
2 yr teleconference	

Miss N.C. Which eye is this?

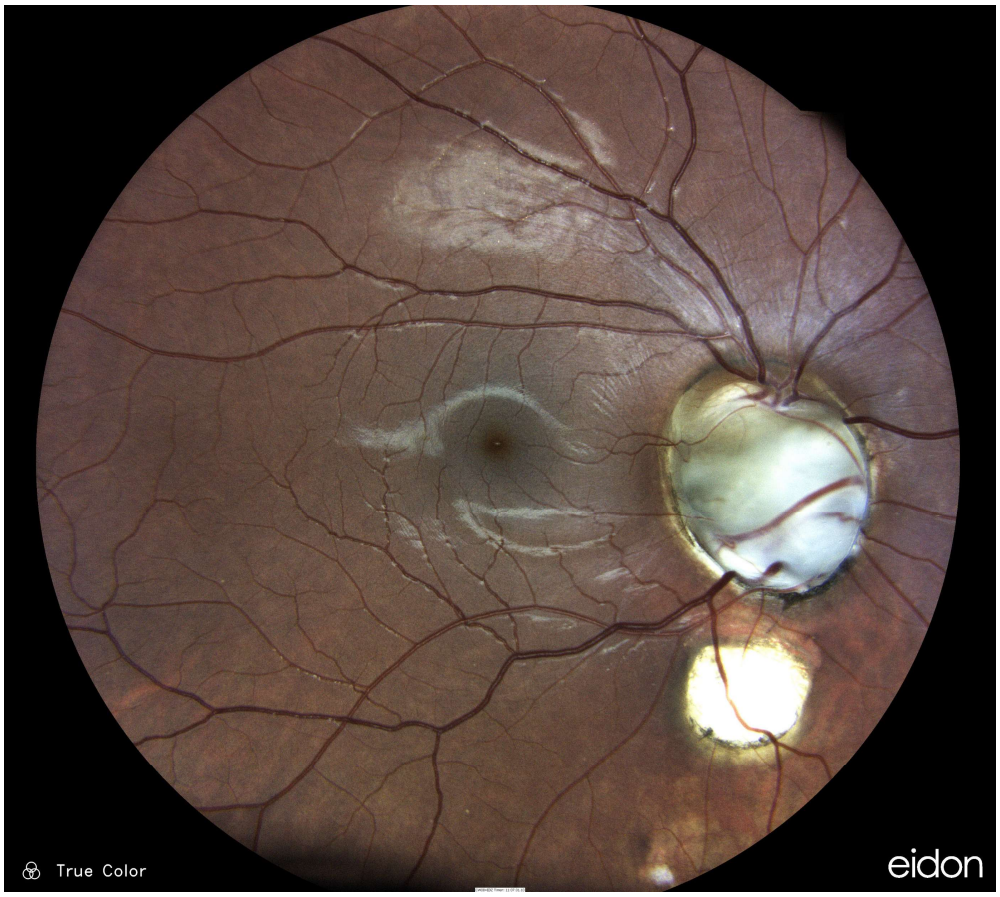
Optic Nerve coloboma

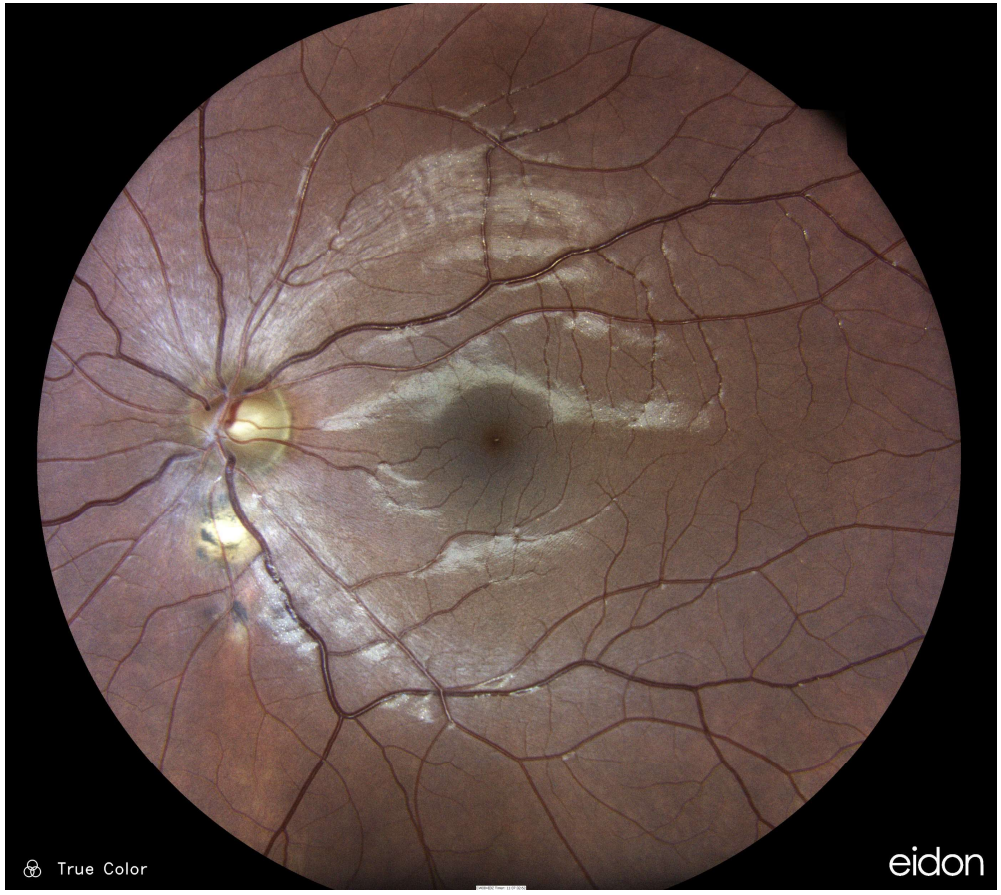




Mr. C.W. aet 25

No prior eye exam H/As & SEs with PC work
Vision 6/6 OU mild hyperope
Normal C/V, PERRLA





Optic nerve coloboma

Uncommon, unilateral or bilateral congenital condition caused by incomplete closure of the embryonic fissure leaving a gap inferonasally.
May present as sporadic cases or autosomal dominantly inherited (bilateral)

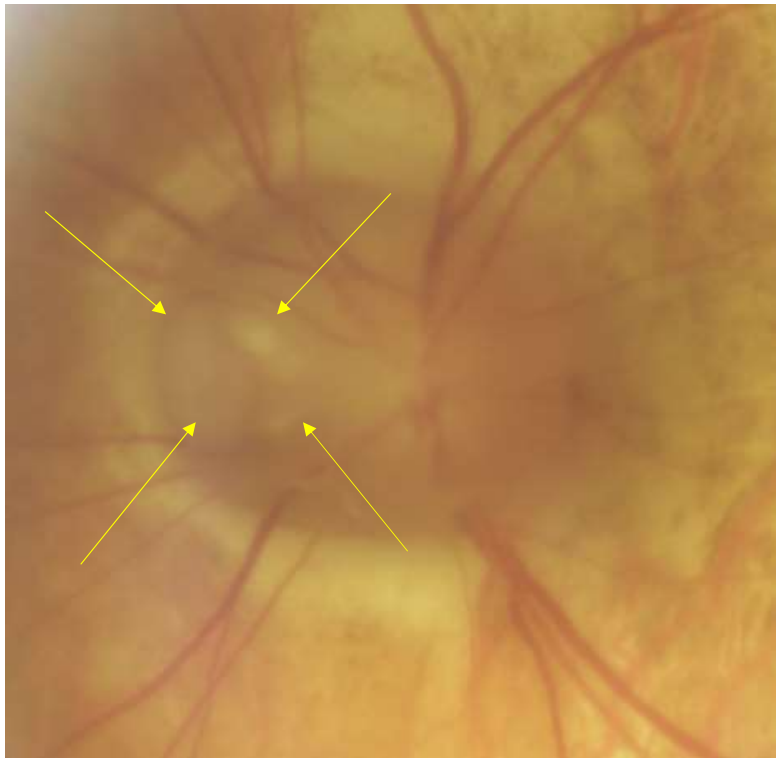
Enlarged, sharply circumscribed, glistening white and deeply excavated optic disc

Can develop serous macular detachment
RAPD & VF defect
agenesis vs dysgenesis (Morning glory)

AMERICAN ACADEMY OF OPHTHALMOLOGY® Protecting Sight. Empowering Lives. EyeWiki®

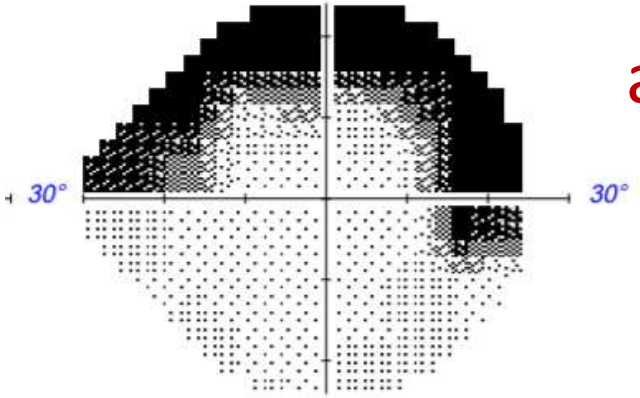
Coloboma

Original article contributed by: David J. Herren, MD, Louise A. Mawn, MD, FACS

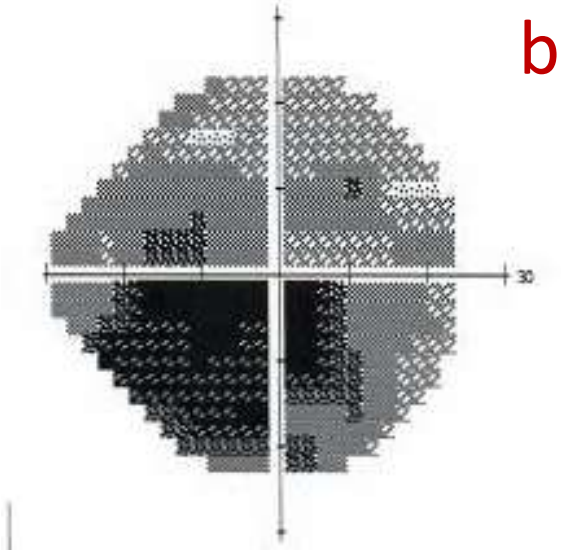


Quiz 1 What's the expected right VF defect?

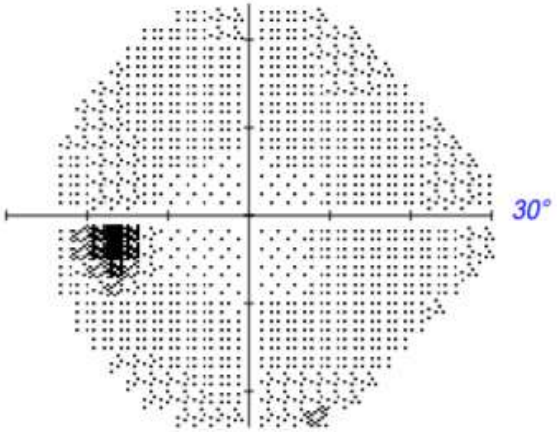
a



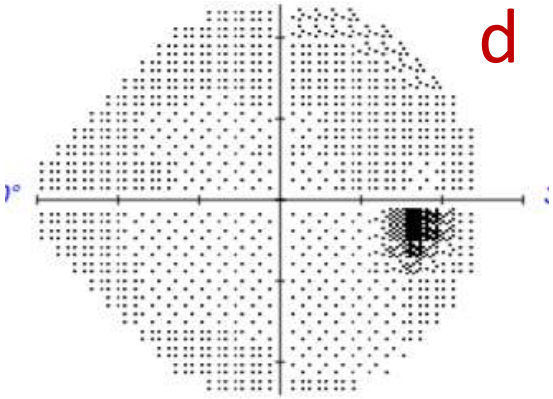
b

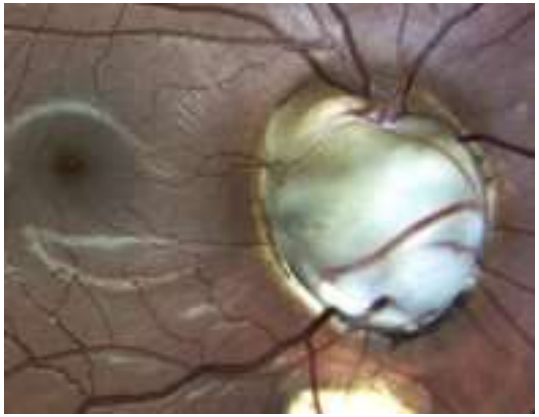


c



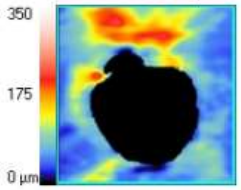
d





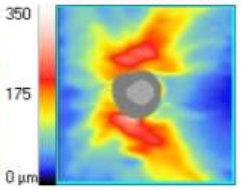
ONH and RNFL OU Analysis:Optic Disc Cube 200x200 OD ● ● OS

RNFL Thickness Map

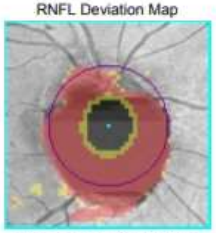


	OD	OS
Average RNFL Thickness	44 µm	131 µm
RNFL Symmetry	15%	
Rim Area	0.00 mm²	1.59 mm²
Disc Area	0.00 mm²	2.21 mm²
Average C/D Ratio	0.00	0.53
Vertical C/D Ratio	0.00	0.53
Cup Volume	0.000 mm³	0.197 mm³

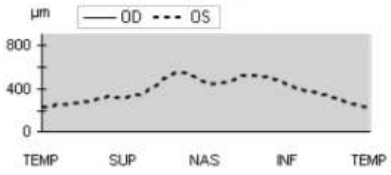
RNFL Thickness Map



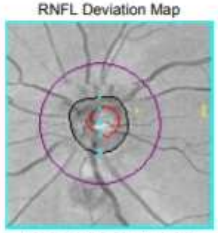
RNFL Deviation Map



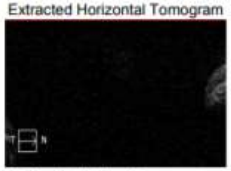
Neuro-retinal Rim Thickness



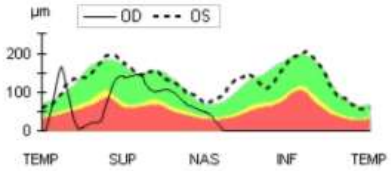
RNFL Deviation Map



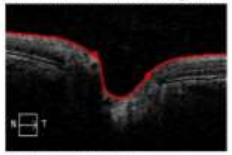
Disc Center(0.00,0.00)mm
Extracted Horizontal Tomogram



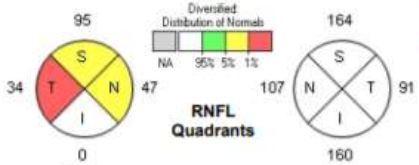
RNFL Thickness



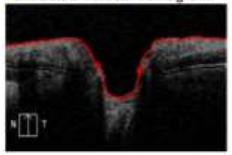
Disc Center(-0.30,0.06)mm
Extracted Horizontal Tomogram



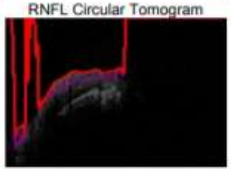
Extracted Vertical Tomogram

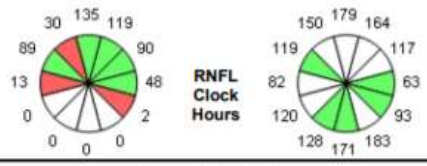


Extracted Vertical Tomogram

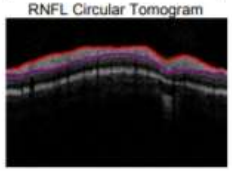


RNFL Circular Tomogram



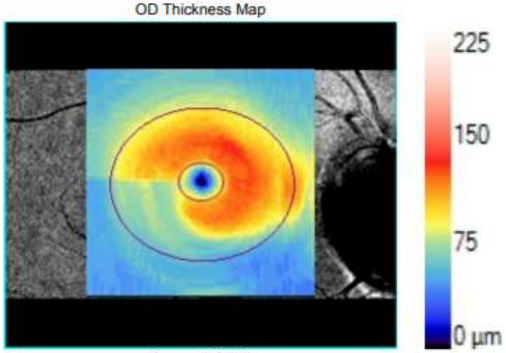


RNFL Circular Tomogram



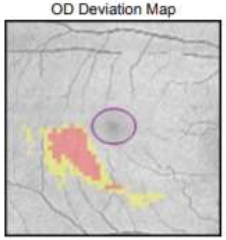
Ganglion Cell OU Analysis: Macular Cube 512x128 OD ●

OD Thickness Map

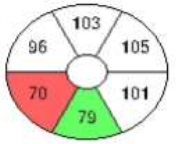


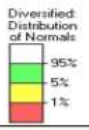
Fovea: 258, 64

OD Deviation Map



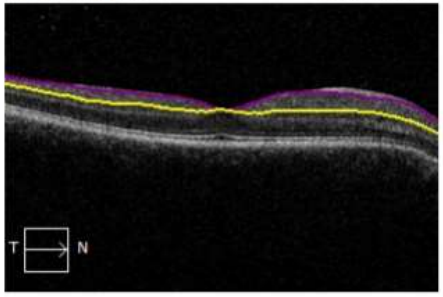
OD Sectors



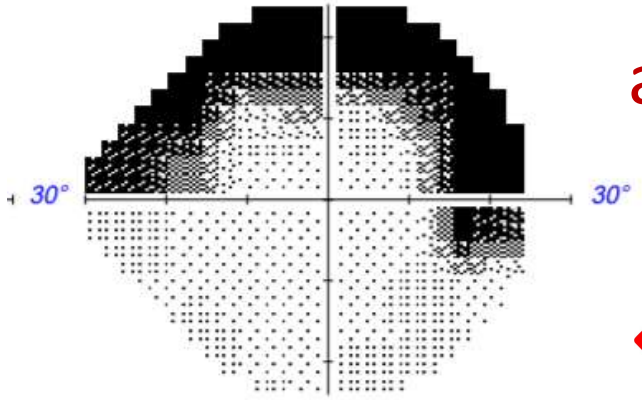


	OD µm	OS µm
Average GCL + IPL Thickness	92	X
Minimum GCL + IPL Thickness	70	X

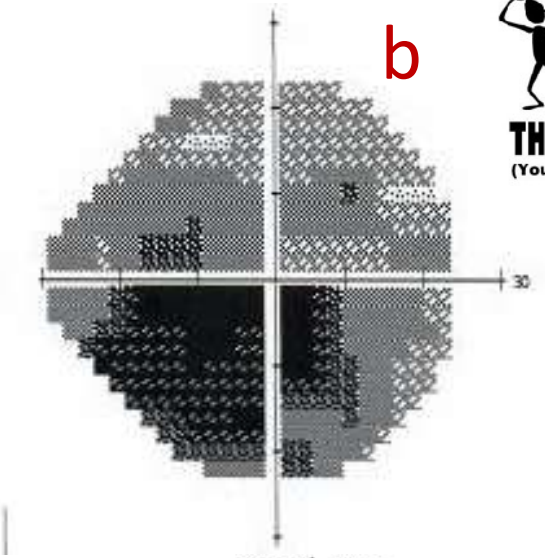
OD Horizontal B-Scan **BScan:** 64



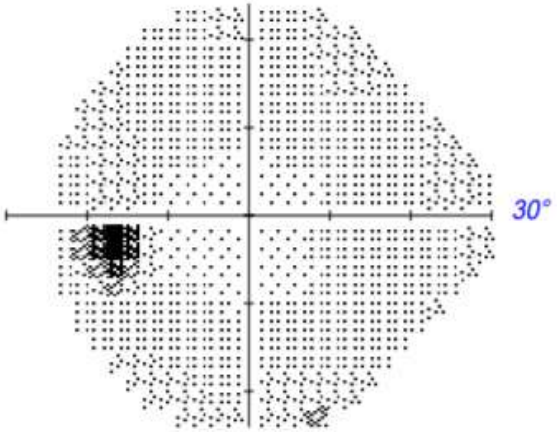
MCQ 1 What's the expected right VF defect?



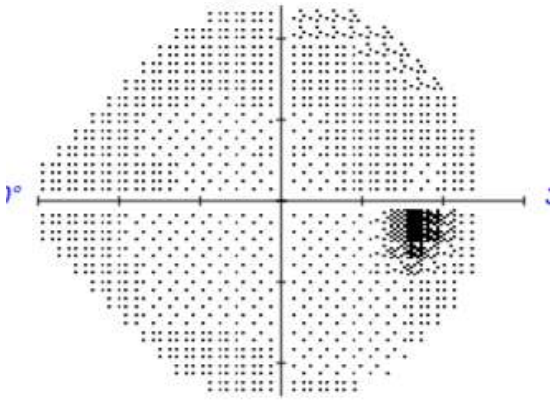
a ✓



b

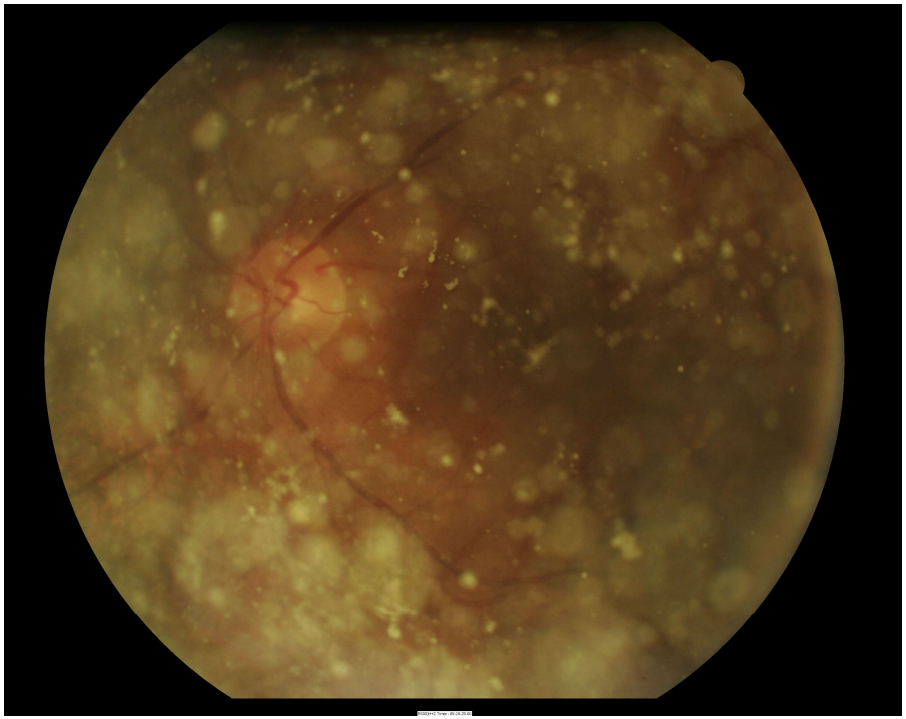


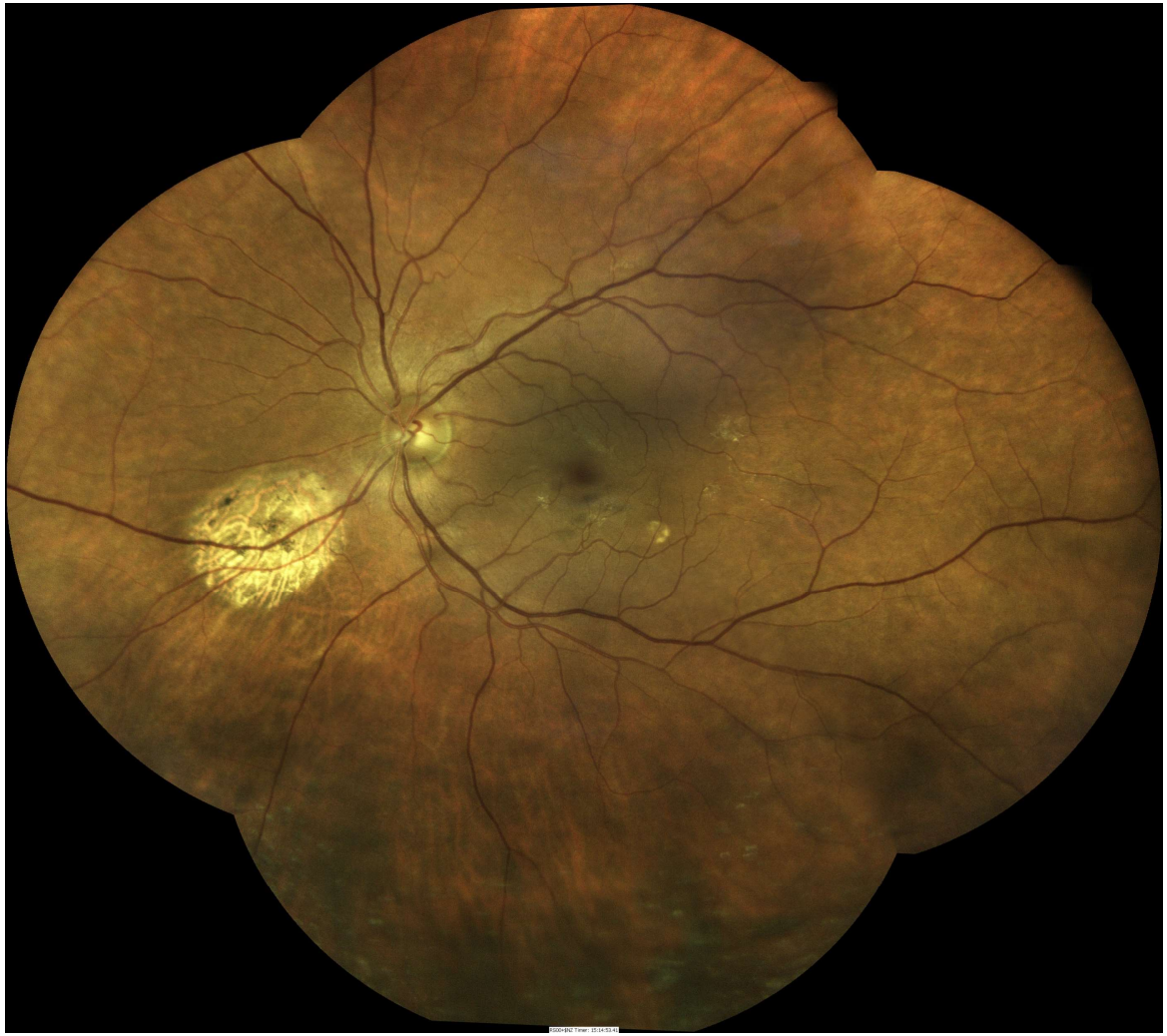
c

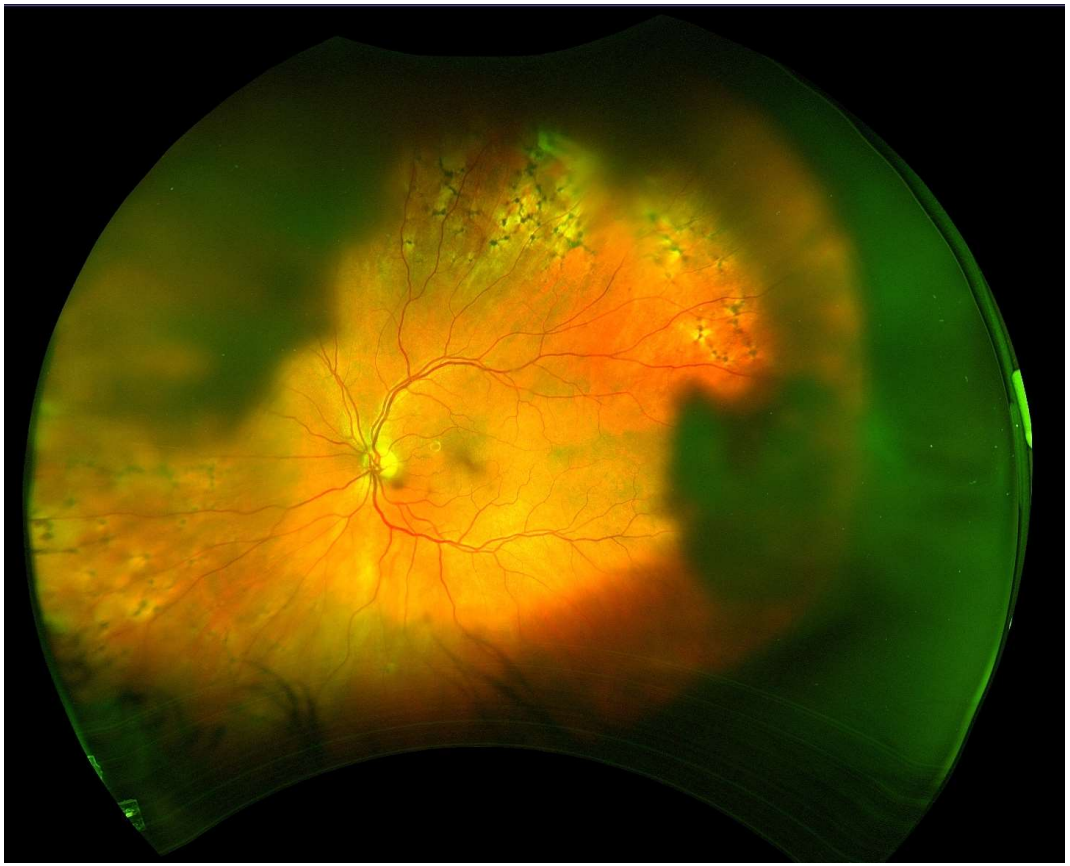


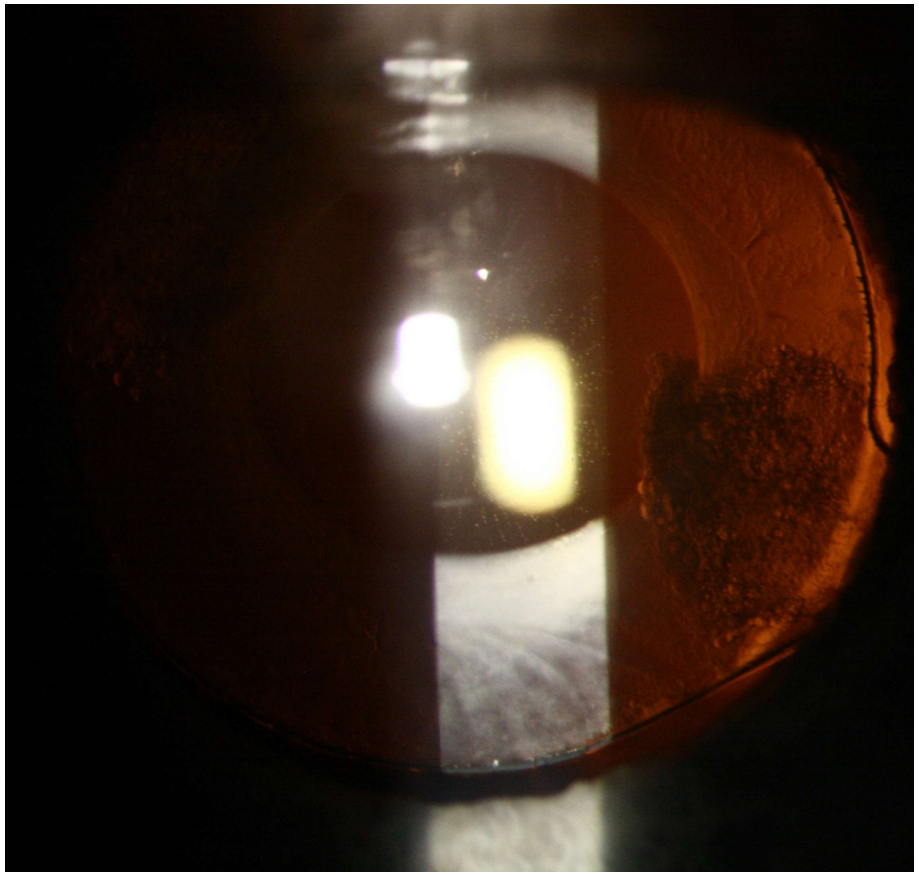
d

DGI vs eidon







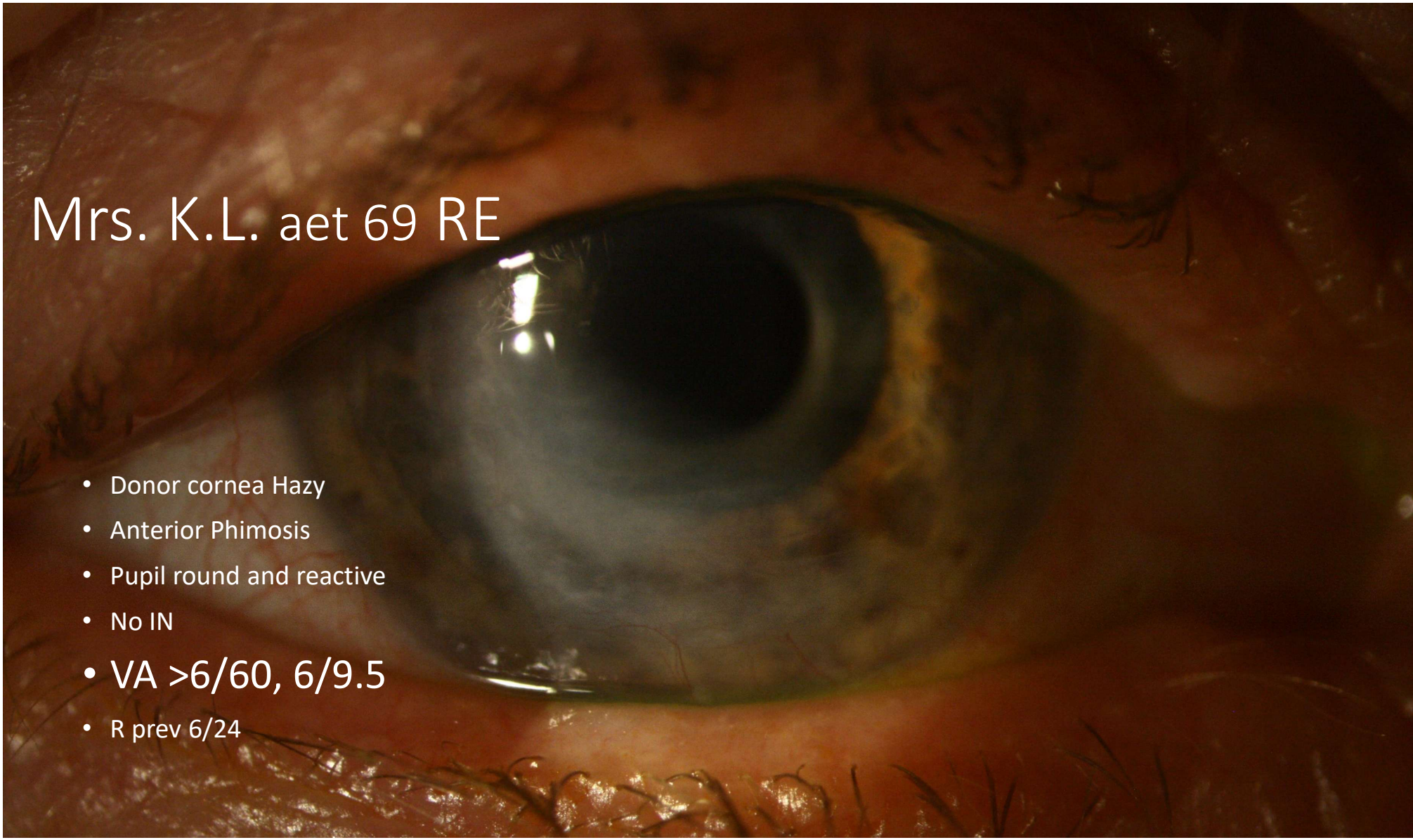


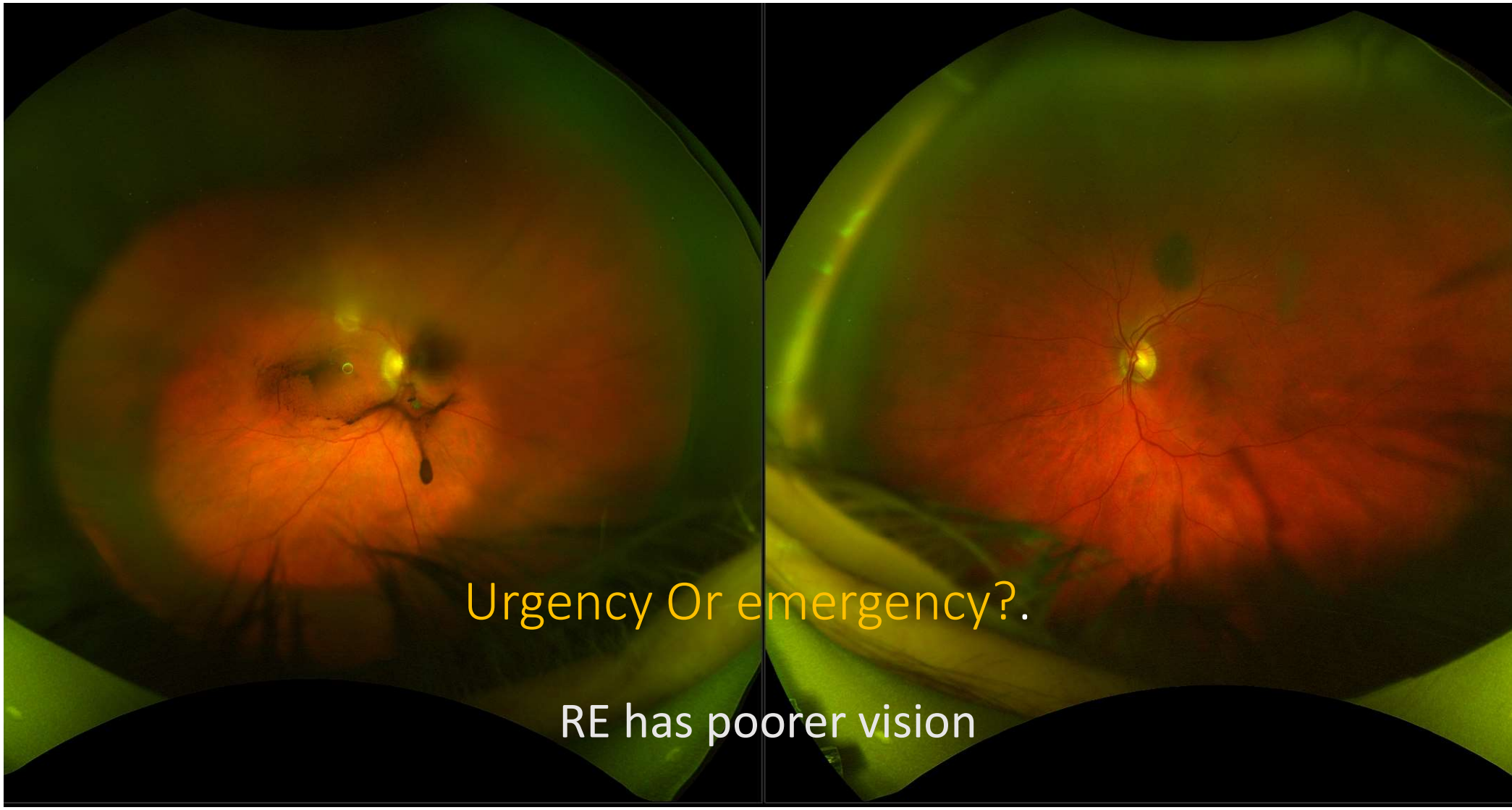
0.3-1.1% Cat Sx retained cortex

Capsular bag shields nucleus & cortex from body's immune system, otherwise antigenic inflammation

Phacoanaphylactic uveitis

What happens with capsulotomy?

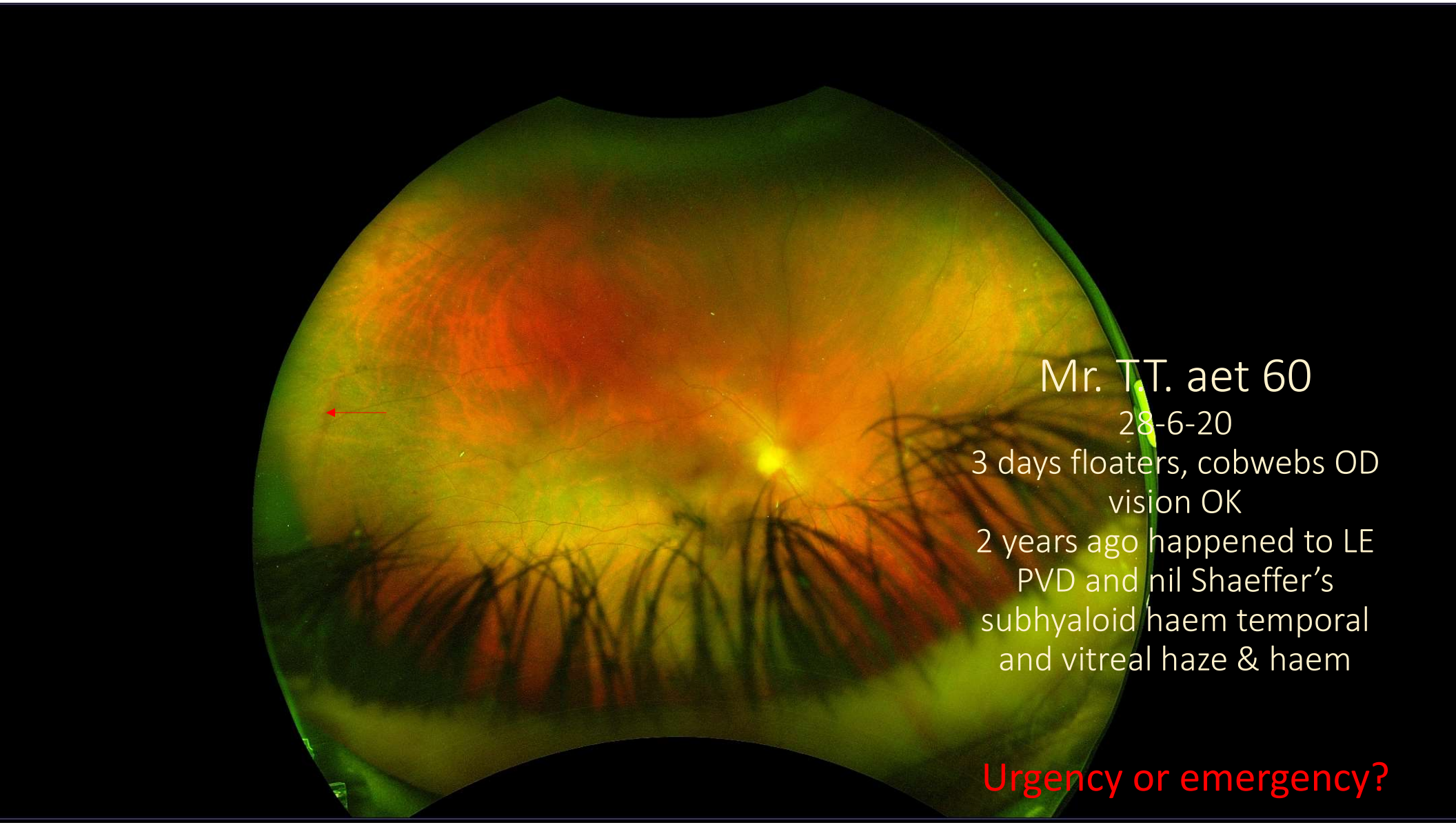

Mrs. K.L. aet 69 RE
• Donor cornea Hazy
• Anterior Phimosis
• Pupil round and reactive
• No IN
• VA >6/60, 6/9.5
• R prev 6/24


Urgency Or emergency?.
RE has poorer vision

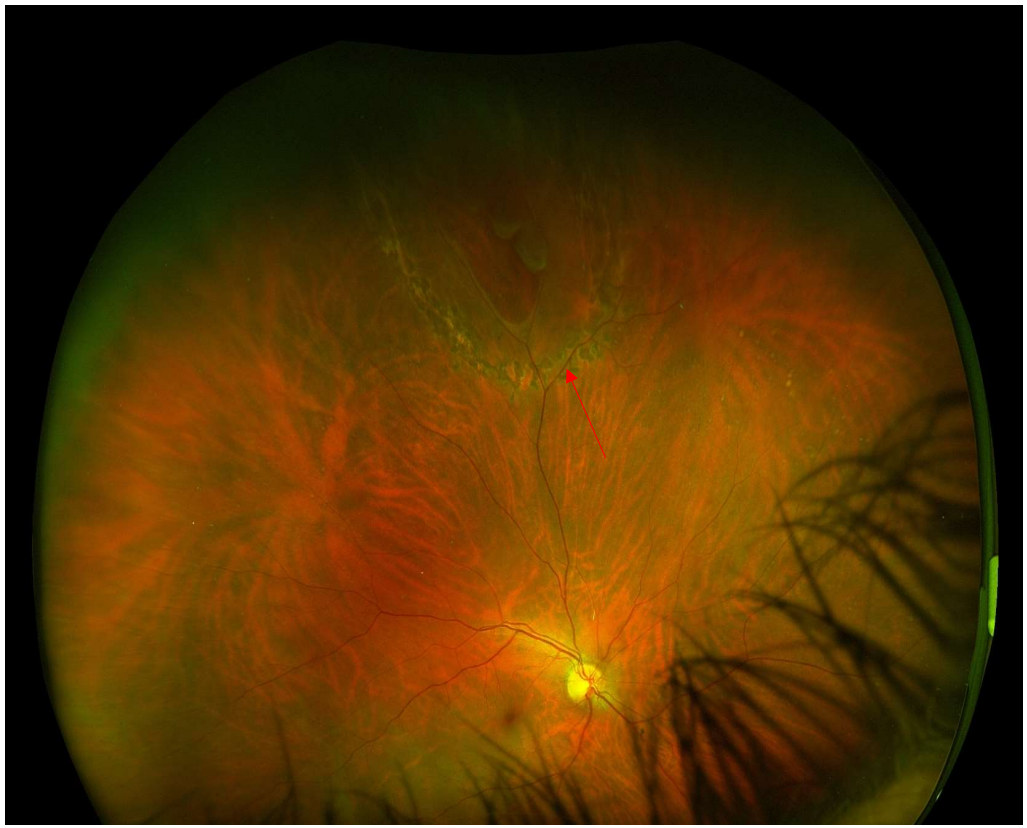
Vitreal Haemorrhage

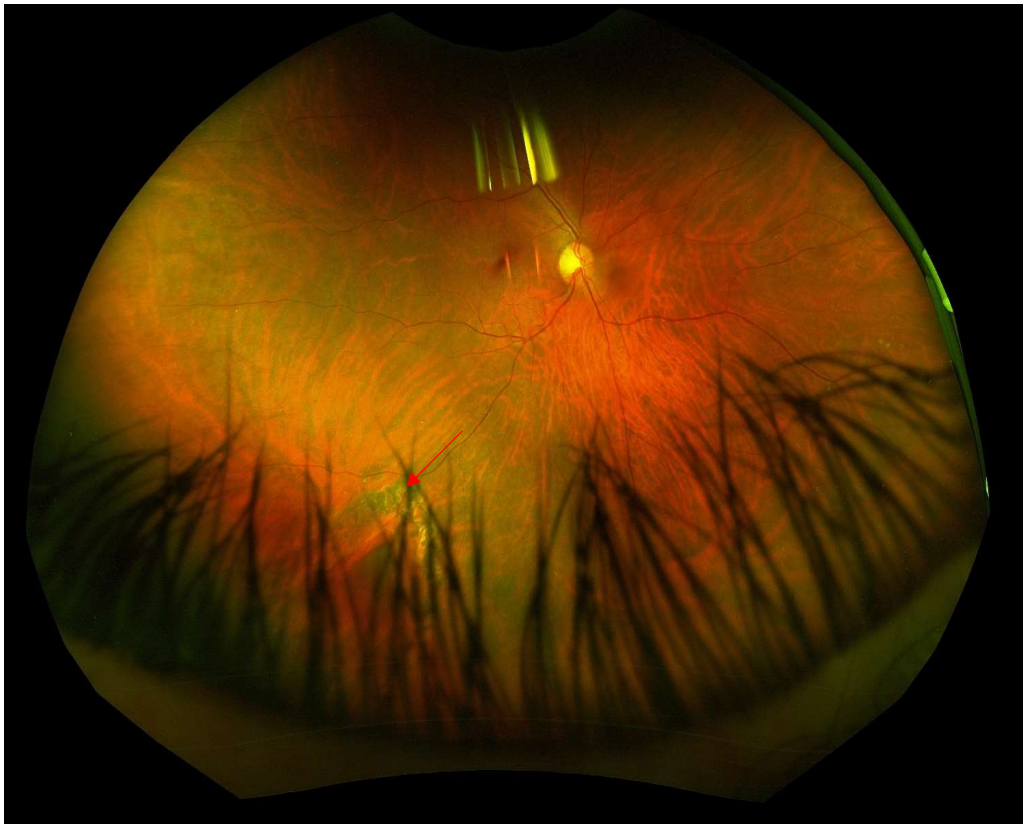
Vitreous haemorrhage Diagnosis & treatment J. Berdahl et al American Academy of Ophthalmology Eyenet magazine March 2007

- Conservative treatment as Eye had reduced vision & COVID
- Emergency referral?
- Haem to clear then B scan
- Aggressive as poor outcomes
- 70 - 95% have retinal tear in the setting of acute PVD
- Vitrectomy, B Scan, find Retinal tear
- Emergency, triage with E & E or VR surgeon


Mr. T.T. aet 60
28-6-20
3 days floaters, cobwebs OD
vision OK
2 years ago happened to LE
PVD and nil Shaeffer's
subhyaloid haem temporal
and vitreal haze & haem
Urgency or emergency?

Mr. T.T. horseshoe tears sup'ly and inf'ly 17/7/20 3 weeks later





Causes of Vitreous haemorrhage

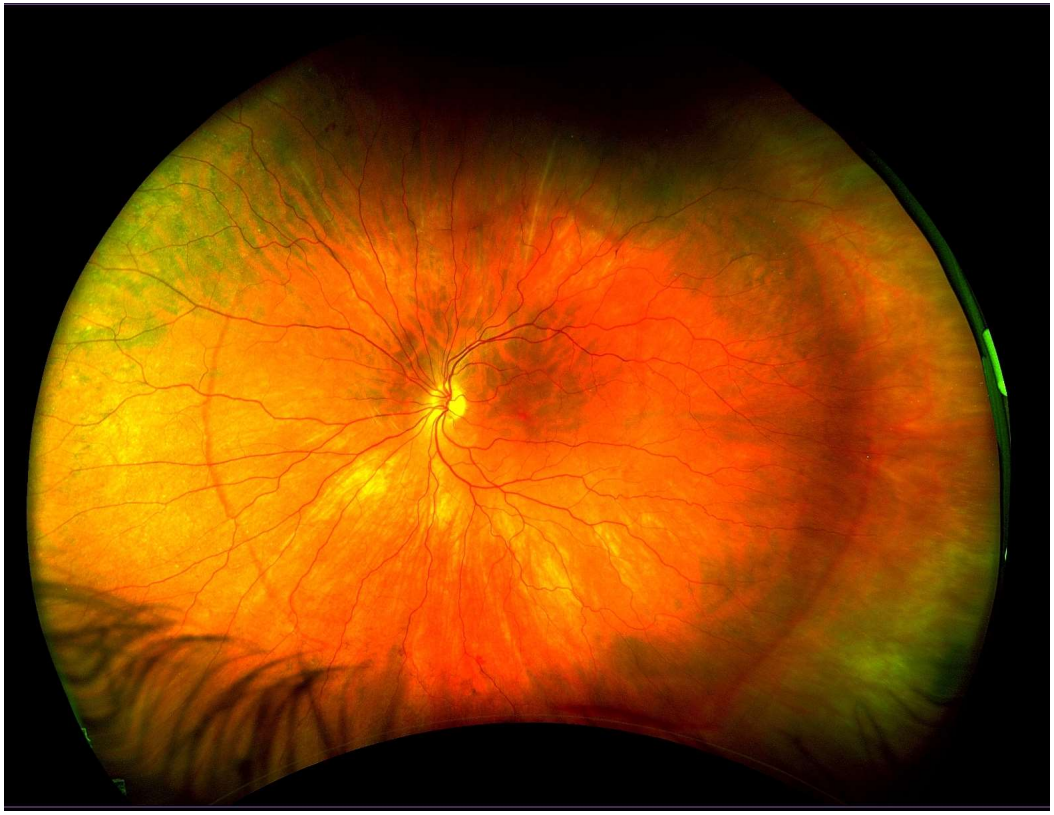
- Abnormal new retinal B.Vs = Ocular ischaemia, DM, peripheral choroidal neovascularisation
- Rupture of normal vessels ie Retinal tears or retinal BV leak via PVD or trauma PVD & Vit haem = 70+% chance ret break
- Blood from adjacent source ie tumour, macroaneurysm
- 7 in 100000 annually

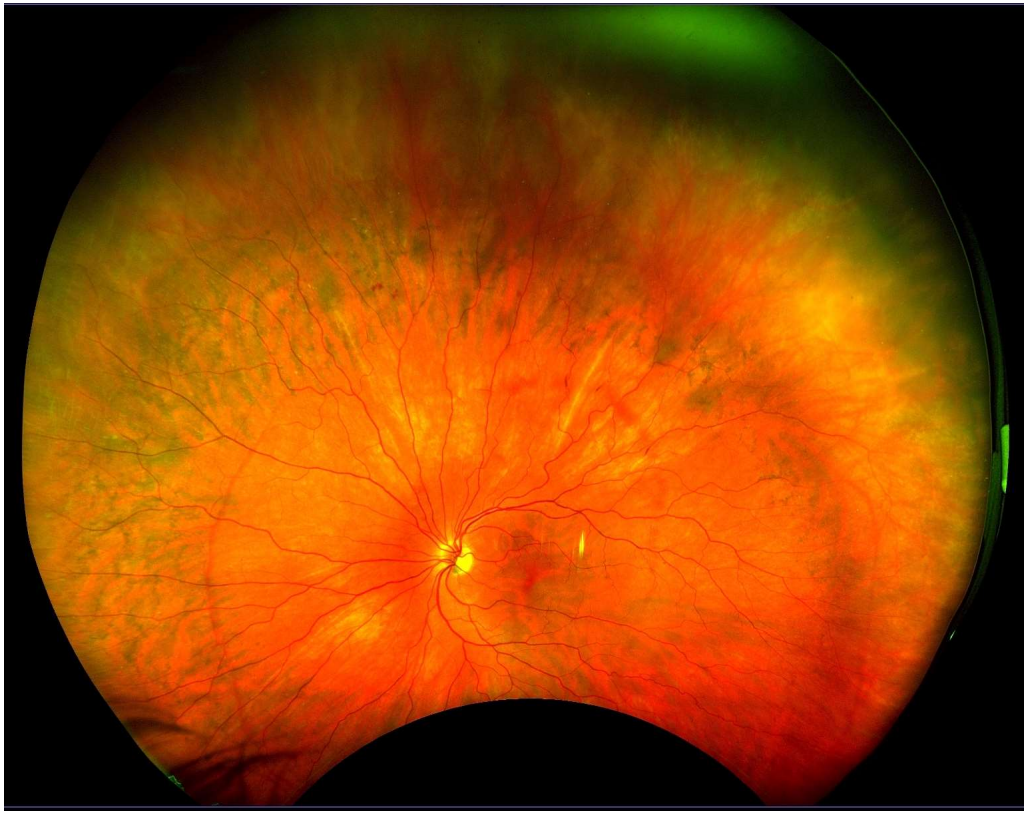
Mr. G.M. 6/11/2020

LE black spots & black circle for 3 days & occas flash NIDDM BSL 7

Nil Shafers, PVD, annular subhyaloid haem pooling inferiorly no obvious retinal tear/hole

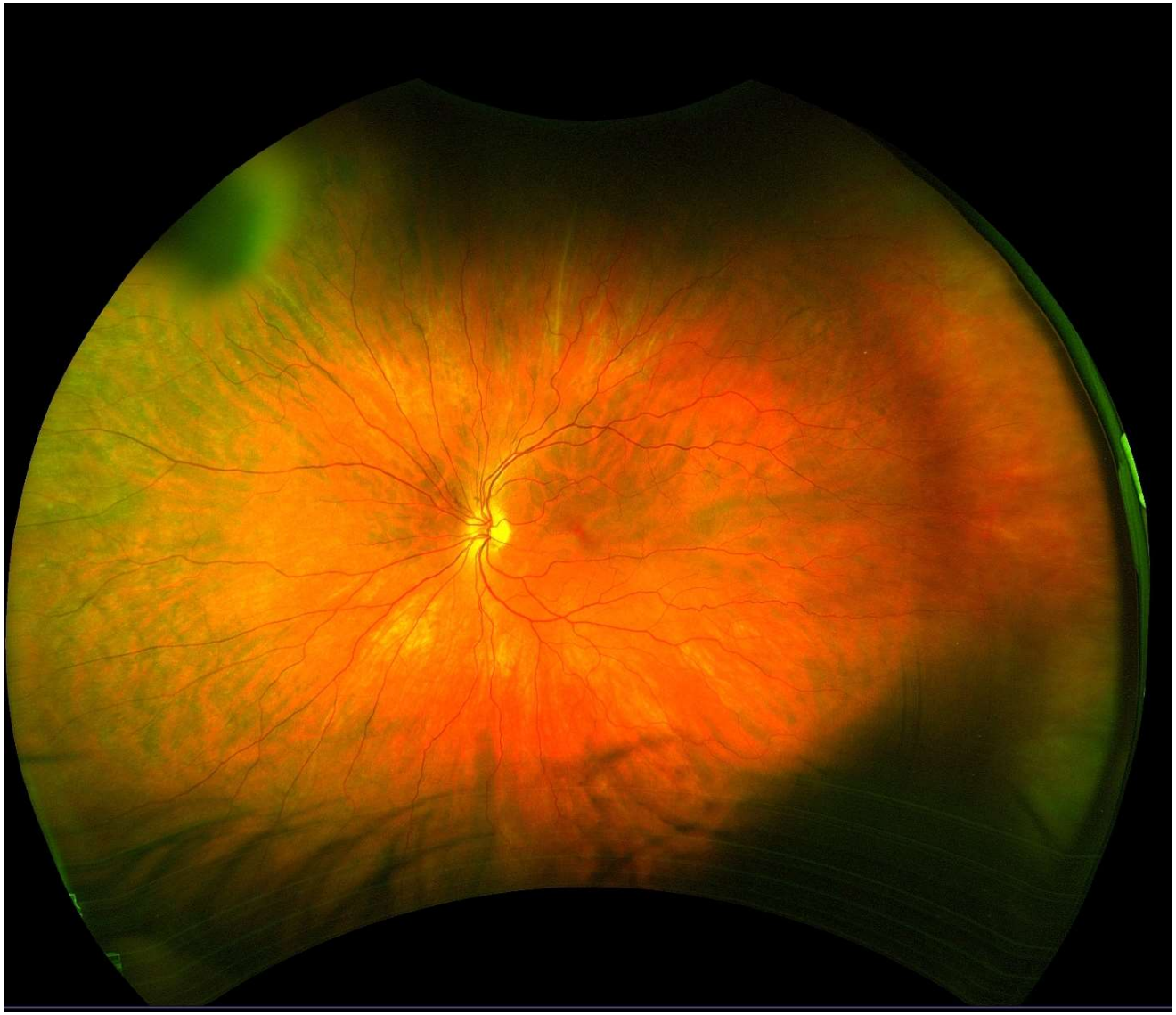
Urgency or emergency?

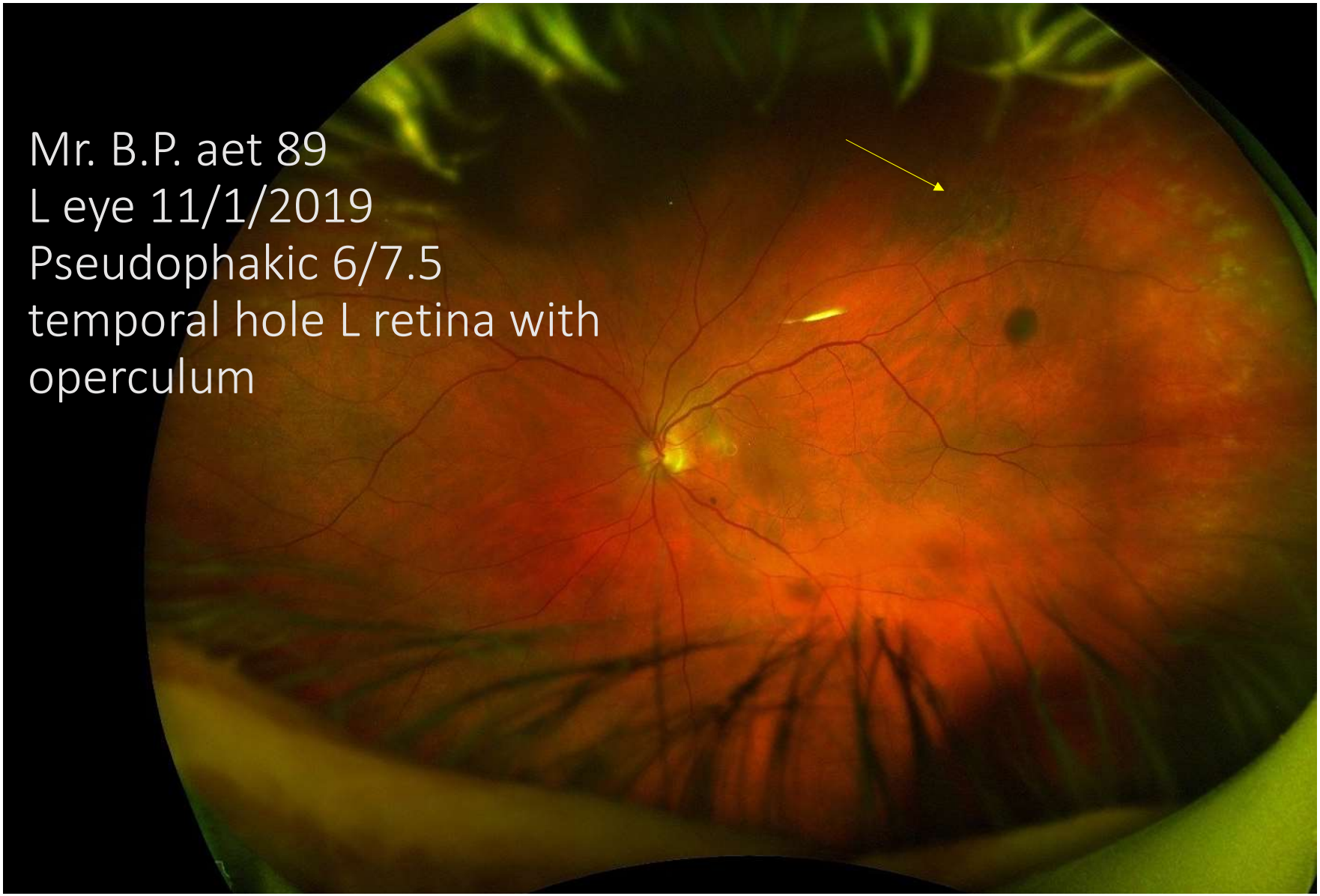




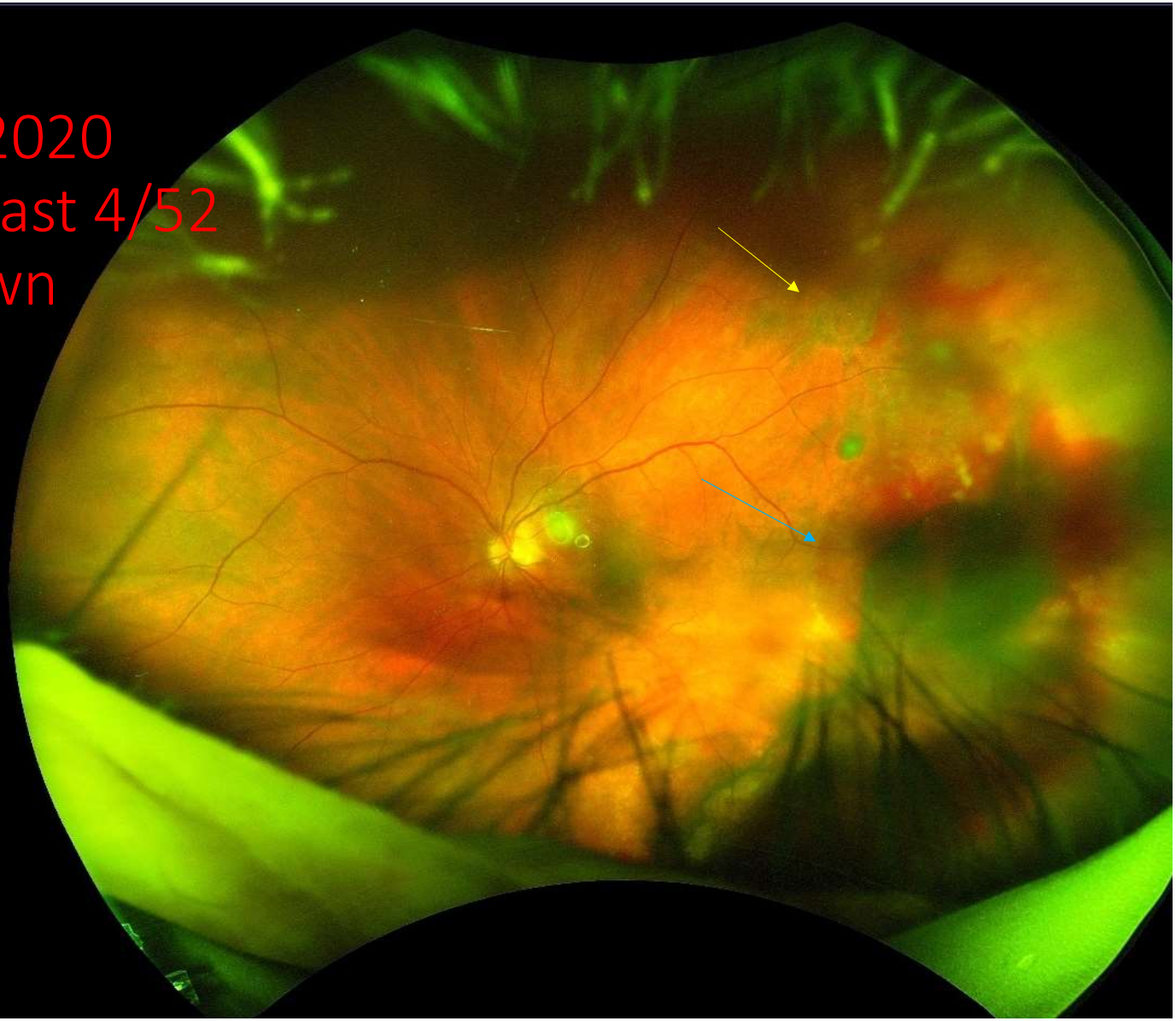
Mr. G.M. 3/12 later

- Appt with VR 3 days after 1st visit
- Haemorrhagic PVD
- Subhyaloid haem
- Review with ophthal 1/12 later
- Discharged
- 2 year RD S & S




Mr. B.P. aet 89
L eye 11/1/2019
Pseudophakic 6/7.5
temporal hole L retina with
operculum

Mr. B.P. 15/5/2020
L vision hazy past 4/52
COVID lockdown



Urgency or
emergency?

Mr. B.P.

- Conundrum
- All Ophthalmologists in lockdown
- Will not see anyone with watery eye, conjunctivitis
- E & E
- Risk an 89 yo exposure to Covid 19?
- Blind in one eye, death? What trumps?
- What's the differential Dx?

What did I do?

Organise appt with POAG Ophthal for Monday morning

Sunday I SMS his POAG Ophthal ‘RD LE macula on, where do I send him?’ & gave him Mr. B.P.’s contact numbers with Optos

Send to E & E, I haven’t seen him in 2 years!

I couldn’t raise B.P. and Surgeon said to pass on his number

6:10 pm surgeon sms me : not RD new choroidal vessel in periphery

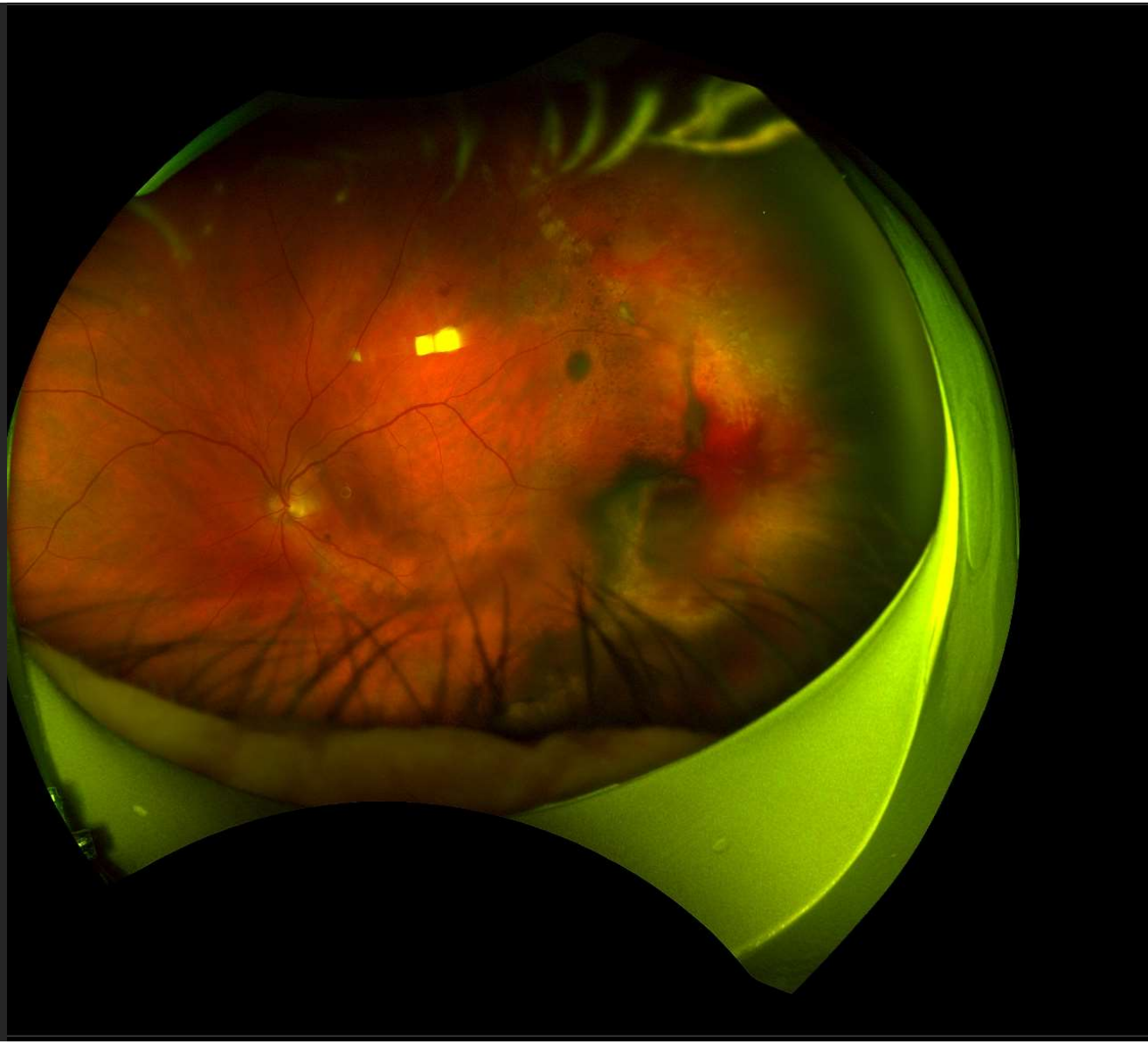
Conservative Tx no Anti veg F, no laser, no steroid

Phoned B.P. E & E remarkably quiet 4 interns, consultant

Peripheral choroidal neovascularisation

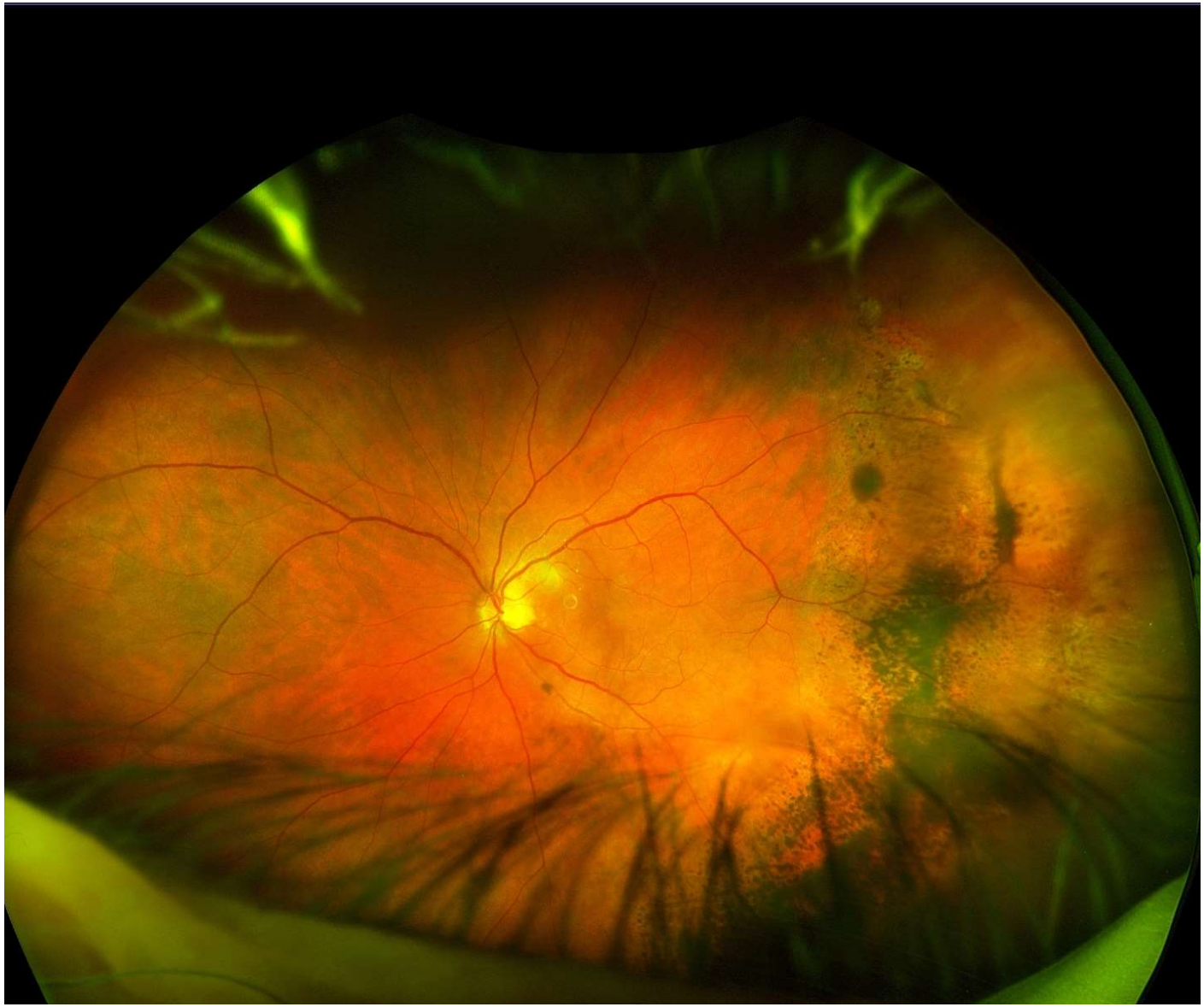
- Eccentric disciform degeneration, Peripheral exudative haemorrhagic chorioretinopathy, extra macular disciform degeneration
- Wet AMD not at the macula
- abnormal BV growth under the retina 50% also have Mac degen
- 70+, female, HT, anticoagulant
- No Tx maybe retinal laser, Anti vegF?
- Coats like response, abnormal BV development where endothelial cells allow leakage esp cholesterol crystals into retina & sub retina, leukocoria due to cholesterol deposition young males 1/100000

Mr. B.P.
15-6-20
1/12
later



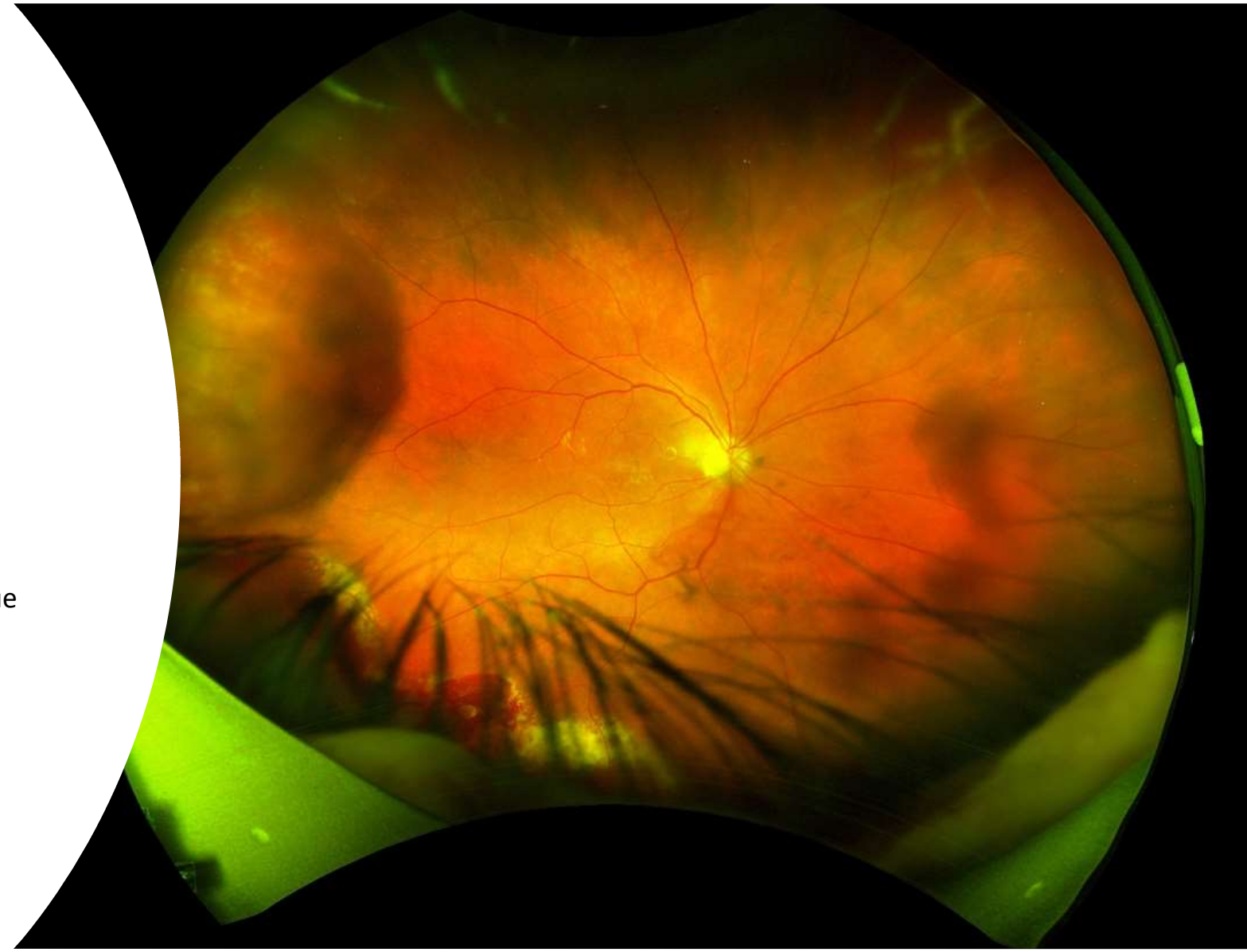
Mr. B.P. 15-10-2020
5/12 after

- Reluctant to go to Melbourne for review
- Pigmentary response and sealed



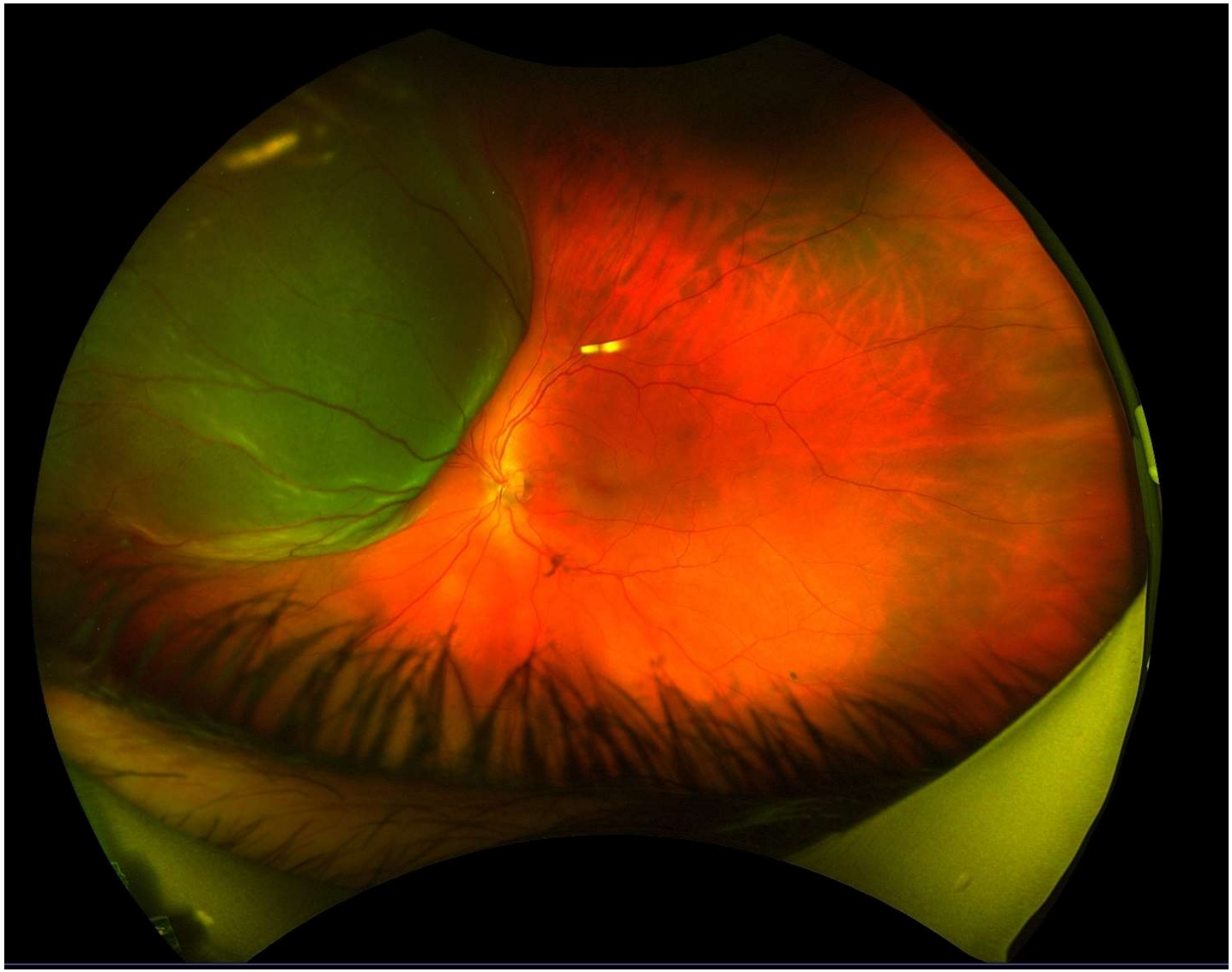
Mr. B.P. 1/2/2021

- Incidental RE finding
- Ophthal report
- No break, no haemorrhage
- No Tx
- Reassurred, review if an issue



Mr. I.M. aet 59 May 20
‘I have a retinal detachment’
Cat Sx 9/19
Floaters since cat Sx
occas temporal flash

How do you triage?
Do you follow up?



A Detached Retina – Surgery at Sydney Eye Hospital

Quiz
RD triaged Pt, phoned Ophthal, sent images, expecting Pt at E & E, what are the next instructions?

- 1 No food 6 hours, no clear fluid or water for 2 hours ✓
- 2 Call an ambulance ?
- 3 No food 6 hours, can sip fluid ?
- 4 Do you have someone to take you? ✓
- 5 Do you have somewhere to stay in Melbourne? ✓
- 6 Do you have private health insurance? ?

Local = vitrectomy, bubble, laser
GA = Cryo, buckle, bubble

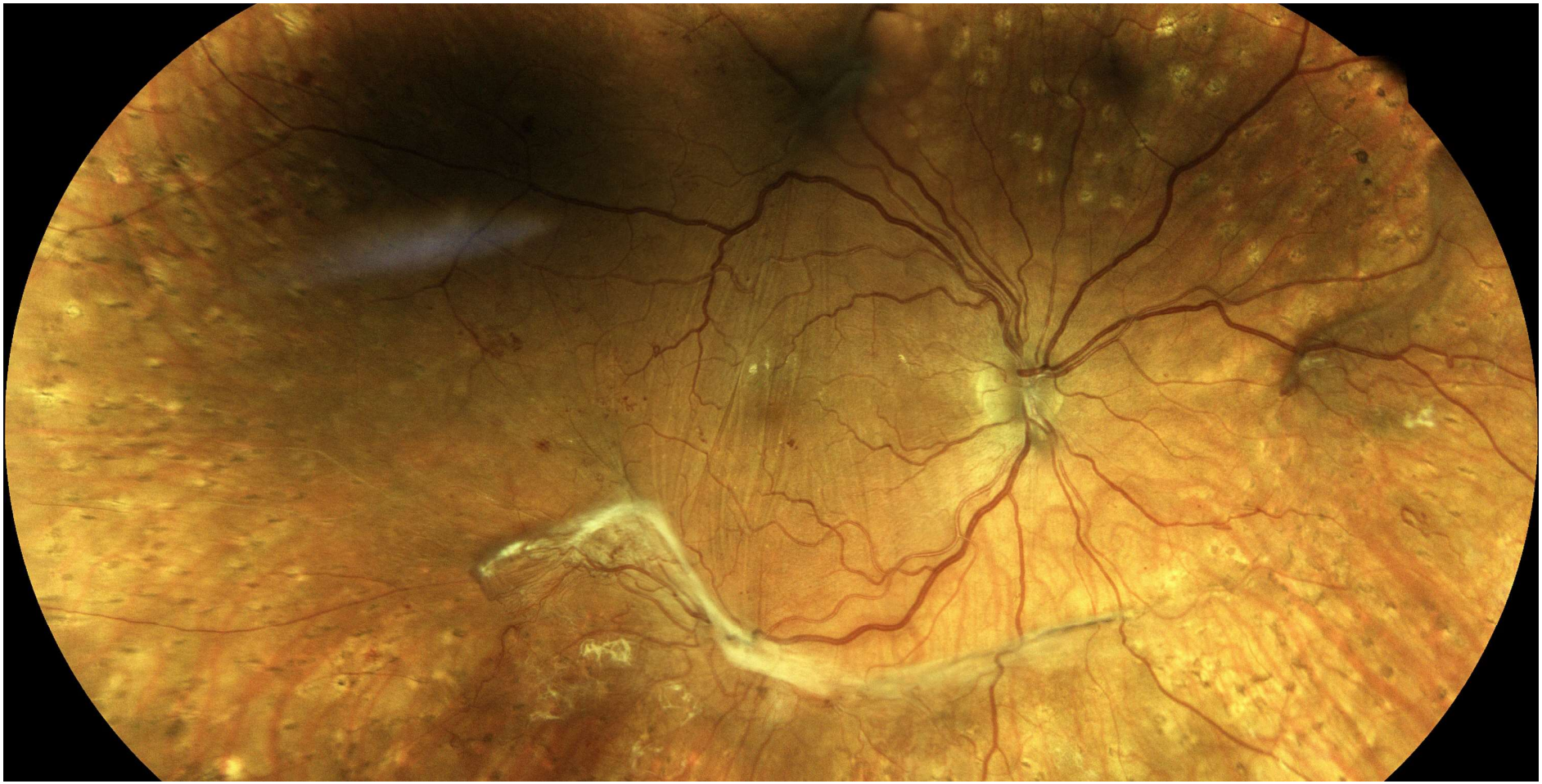
If definitely local can eat or drink
Problem is if need to convert to GA
So 1 is most appropriate

"Can I have a coffee?"
Milk is the same as food due to fat content delaying gastric emptying ie 6 hrs

Retinal detachment fun facts

- Separation from the retina proper and the RPE
- Rhegmatogenous rRD vs Non rhegmetogenous nRD
- rRD Rhegma = break retinal tear/hole, liquified vitreous to SRS, towards macula
- nRD absence of tear,
- Tractional : Proliferative diabetes, ocular ischaemia, CRVO
- Exudative : rpe damage fluid from Choroid to SRS ie AMD, peripheral retinal neovasc, CSR, choroidal tumour

nRD proliferative DM



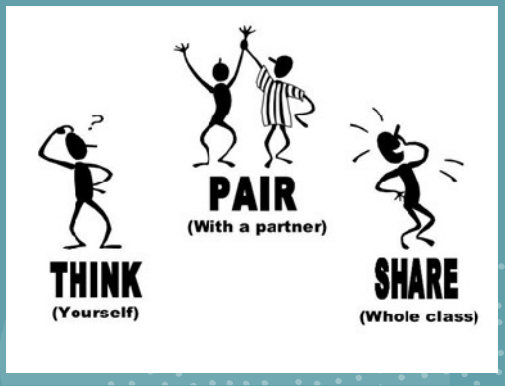
Epidemiology & risk factors RD

- 6.3-18/100000 people ie 315-900 per yr in Melb
- Age 50+, males
- Trauma 6-16% rRD with break esp if < 50
- Up to 7% have bilateral RD
- Risk of RD fellow eye 3 - 10%
- pseudophakia, myopia, LD 15%
- Myopia -1 to -3D = 4 x risk increase, > -3D = 10 x increase
- Cat Sx thinner IOL, more movement 10-33% increase
- Acute PVD 10-17% have retinal tears
- Pigment hypertrophy is my friend

Quiz Vitreal haemorrhage
Which of the following is true?

1 Vitreal haemorrhages will clear on their own accord and are in themselves benign
2 Most vitreal haemorrhages are suspicious of a retinal tear
3 Vitreal haemorrhages are a common sequalae to PVD
4 Current treatment for a Vitreal haemorrhage includes vitrectomy, scleral buckle and cryotherapy

Quiz Which of the following is a false statement regarding peripheral retinal neovascularisation?

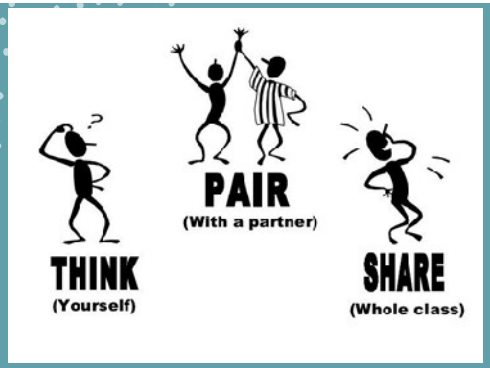


1/ It is also known as Eccentric disciform degeneration

2/ It is amenable to Ranibizumab injections

3/ 50% of patients with peripheral retinal neovascularisation also have macular degeneration

4/ It is similar to dry macular degeneration



Quiz Which of the following is less of a risk factor for retinal detatchment

a/ Trauma

b/ female

c/ prior cataract surgery

d/ vitreal haemorrhage