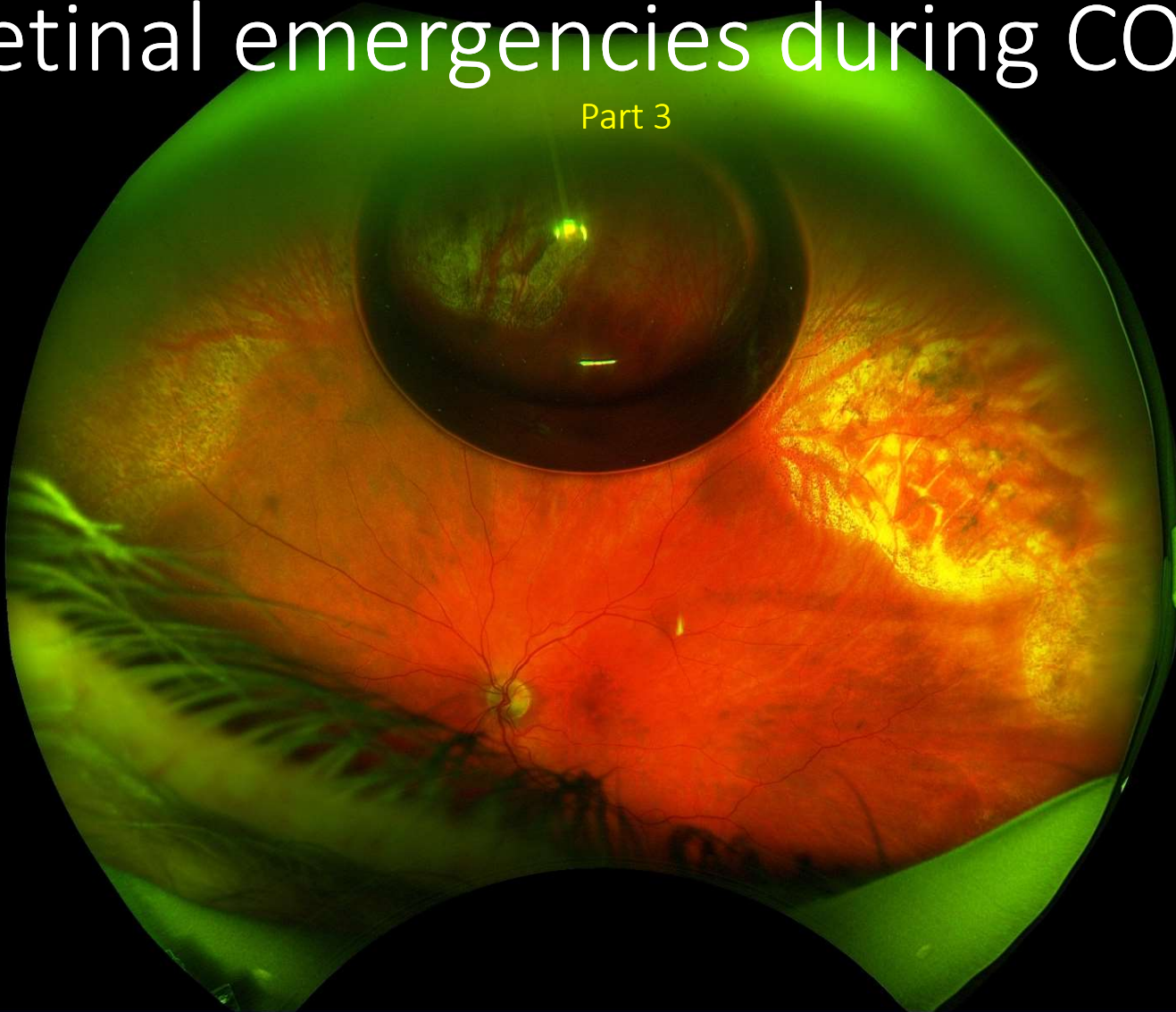


Retinal emergencies during COVID

Part 3





Quiz Which of the following are possible sequelae following RD Sx

a/ Diplopia

b/ High IOP

c/ Increased glare intolerance

d/ Haloes

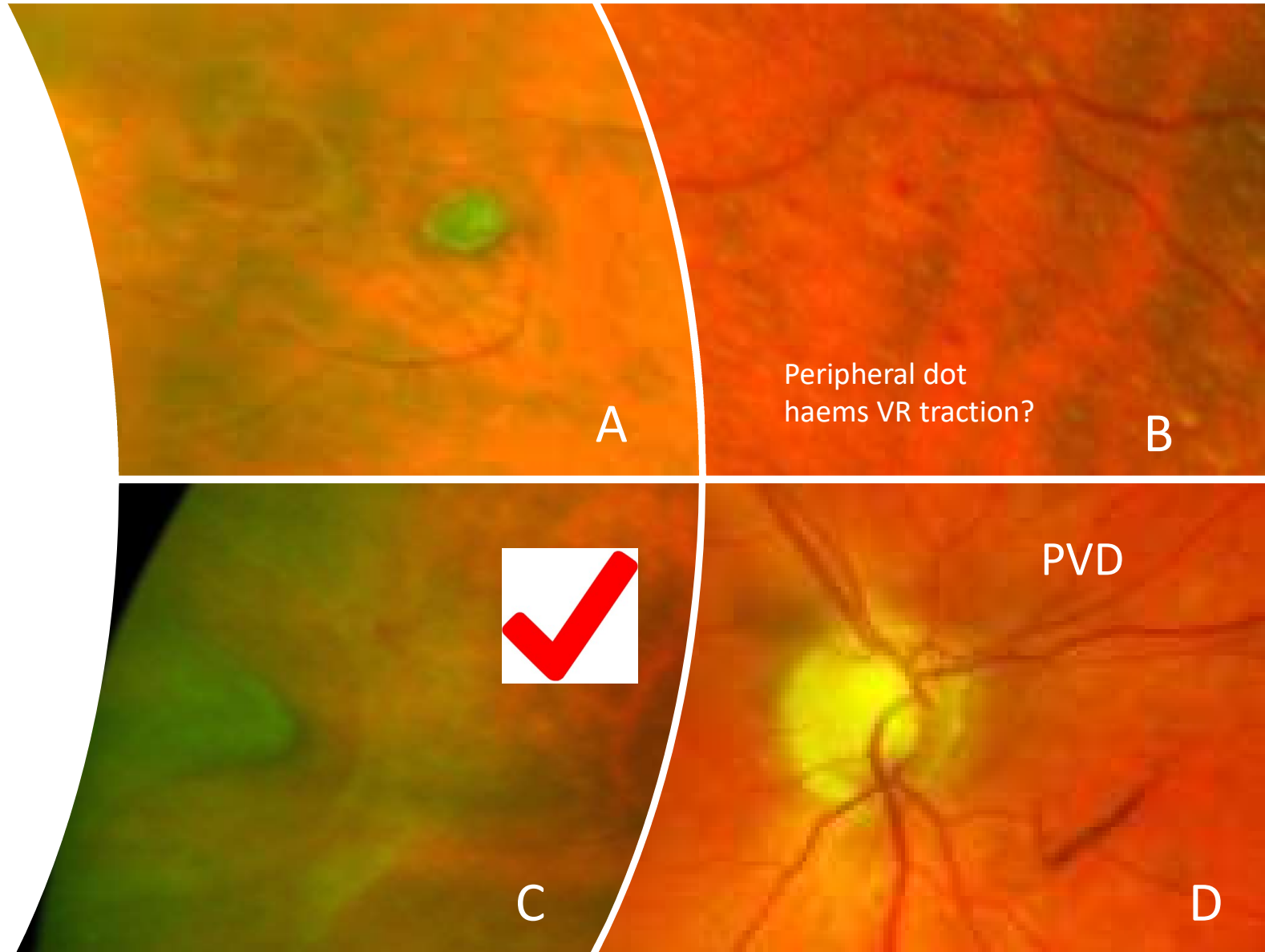
e/ Cataracts

f/ all of the above



Quiz Which of the following requires urgent referral?

- 1 A & D
- 2 B & D
- 3 C & D 
- 4 A, B & D





Quiz Which of the following patients needs an emergency referral?

1 asymptomatic high myope with retinal hole with operculum and prior PVD

2 68 yo low hyperope with a temporal horse shoe tear with pigmented posterior edge and no obvious subretinal fluid

3 Low myope with vitreal haze following blunt trauma and occasional flashes

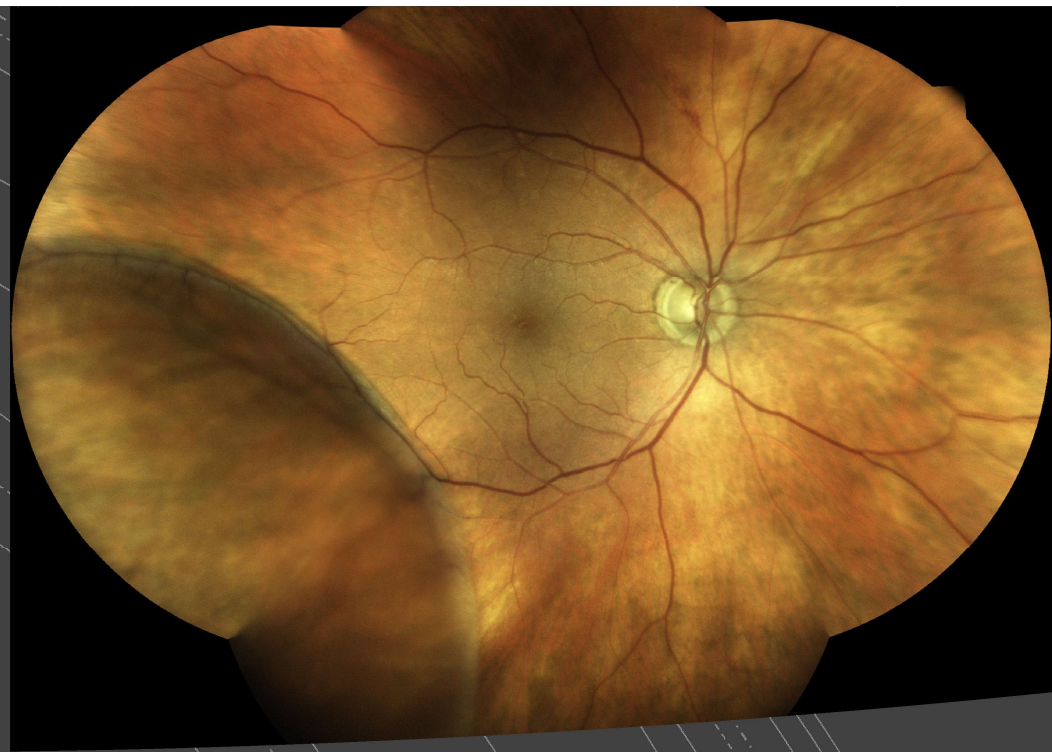
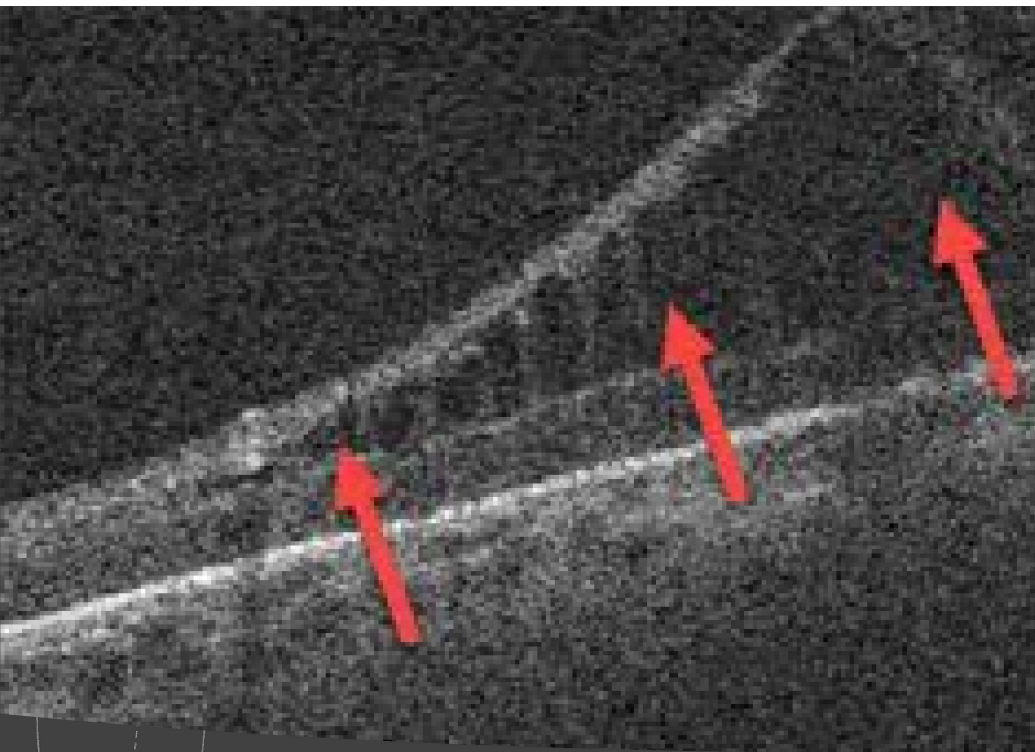
4 High myope with peripheral lattice degeneration, no PVD, good vision and asymptomatic



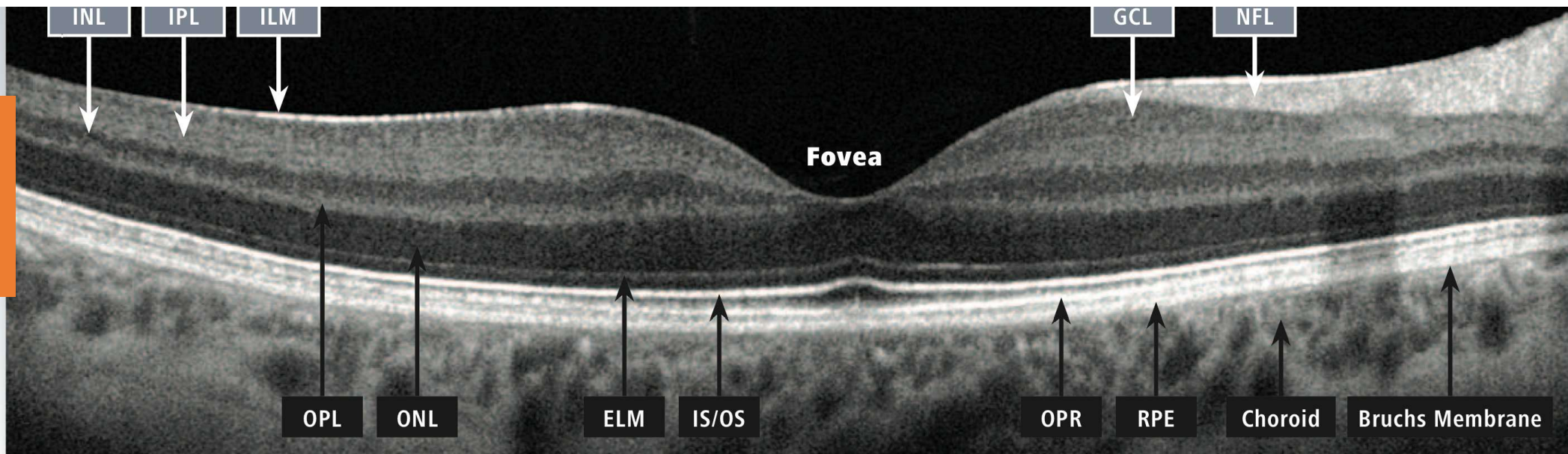
MCQ Which of these statements about lattice degeneration is false

- 1/ All lattice degenerations should be treated with retinal laser to prevent progression to rRD ✓
- 2/ 60% of eyes with rRD have lattice degeneration
- 3/ Lattice degeneration is more common amongst high myopes
- 4/ Lattice degeneration has stronger adhesion to the vitreal face and are more prone to retinal tears with PVD





Retinoschisis behaving
badly



Retinoschisis

Juvenile X linked rare poor vision RD?
 acquired = degenerative, idiopathic splitting

- Splitting sensory retina at OPL
- Outer (choroidal layer) inner (vitreous layer)
- +ve scotoma
- 7% population > 40
- Hyperopes
- Generally outerplexiform
- Snowflakes on inner surface Beaten metal on outer surface
- 'Wobbly'



Mr. S.P.^{aet 46}

2-6-18

Black arc & 2 spots on
awakening RE

no flashes after surfing

drinking heavily night before

Vis 6/6 OU

schafer's sign?

ST elevated lesion and can see
underlying retina

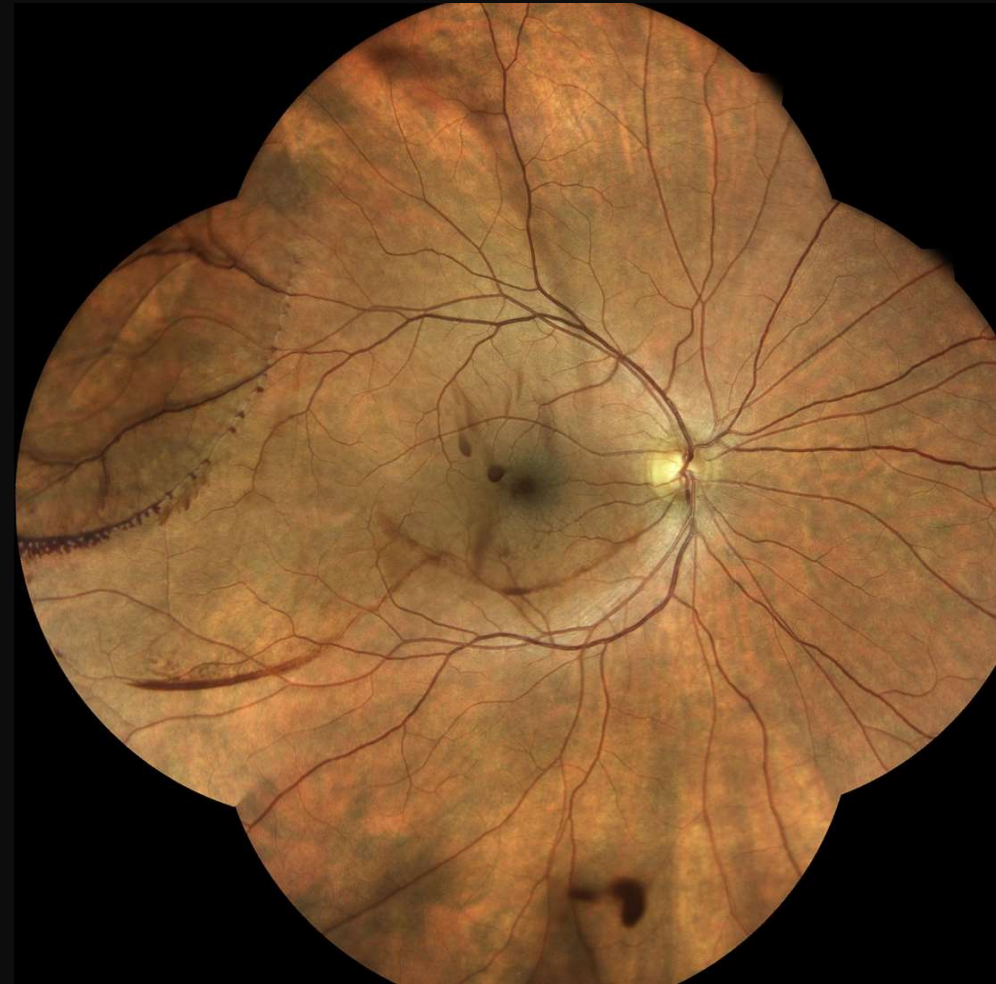
horizontal tear, vitreous haem

VR surgeon

fast, limit head movement,
off to Melbourne ASAP

VR ophthal report

- Vitreous haem without PVD
- Vit haem obscuring macula
- ST chronic RS confirmed on OCT
- Inner retinal hole
- Blood along lower border of schisis cavity
- **Discussion**
- Spontaneous Vitreous haem = Valsalva
- Chance of schisis cavity extending is low
- Observe vit haem should resolve on own
- ~~discharged~~



Mr. S.P.29-6-18
4 /52 later
Vitreous haem cleared
chronic inner leaf tear
no sx required
observe & RD symptoms &
signs

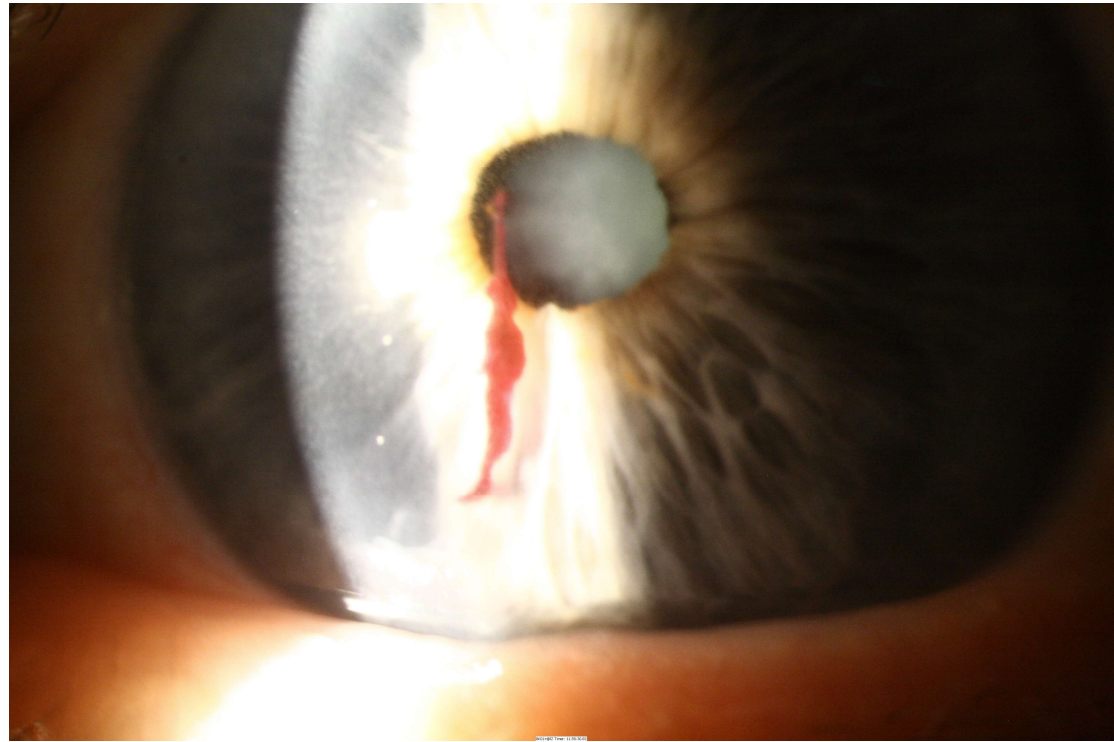


Mr. S.P.
25-2-20
20/12 later



A little diversion

Mrs. B.K. aet 81 NIDDM 13 years , blurred L lower vision amsler NAD 6/7.5+
ACLO changes 3+ hyphaema no flare PERRLA PIOP R 16 L 26 mmHg
action : Hba1c <7% refer to ophthal



Mrs. B.K.

- Ophthal opinion 2 days later
- Completely resolved (sent image) VA 6/6 IOP 16 mmHg
- Differential Dx : Trauma, Valsalva, Rubeosis, Iris tumour,
- No PDR, no iris vasculature anomaly, no IN
- Action : not active, Trauma through sleep?

Ms G.H. aet 69

26-8-18

2 years later

13-08-20

RS has moved more posteriorly

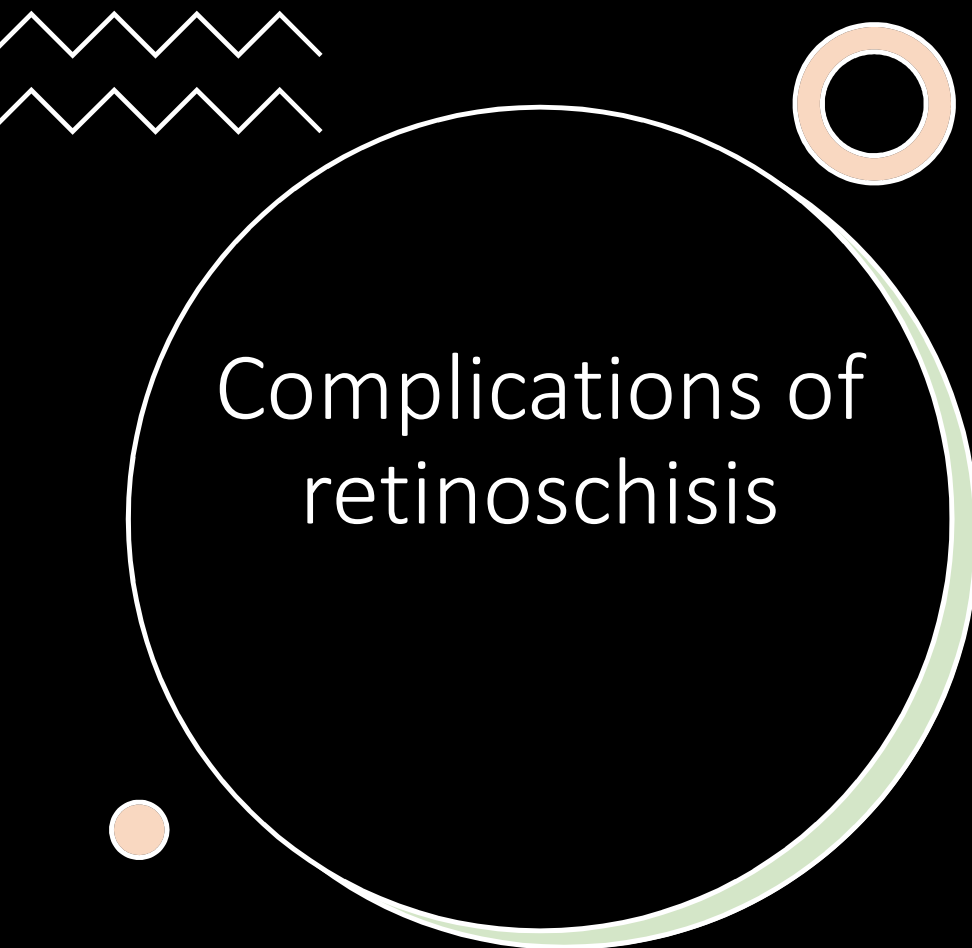




Mrs. G.H.

asymptomatic

No obvious PVD either eye & has retinoschisis inferotemporally OU.....There appears to be a full thickness elevation more temporally left eye confirmed with OCT & I suspect an area of outer leaf defect. An Inner leaf break was not obvious & these are difficult to detect.....She appears to be mounting some RPE change at the border & this maybe sufficient to stabilise the situation & if there is progression she may require barrier retinopexy & she is aware that surgical intervention maybe required.



Complications of retinoschisis

- **Posterior extension of schisis**
 - **Inner leaf breaks** = small, round like atrophic holes (Mr. S.P.)
 - **Outer leaf breaks** = schisis detachment = schisis fluid accumulates in the subretinal space may not progress to rRD due to higher viscosity intraschisis fluid
 - Rhegmatogenous retinal detachment where breaks in both inner then outer leaves allow liquefied vitreous into subretinal space up to 6% of eyes
Barricade laser?
 - Natural history stops 3 disc diameters from the macula
- 

Diagnosis is on the Line

Pigmented and nonpigmented demarcation lines in both eyes hold the clues to this patient's condition

Mark T. Dunbar, O.D.

To distinguish between
a RD and a retinoschisis

peripheral retinoschisis more commonly appears inferotemporally, followed by superotemporally.

Retinoschisis is very clear and transparent, allowing for the choroidal detail below the schisis to be easily seen

Chronic retinal detachments, a pigmented demarcation line can be seen at the junction between attached and detached retina.

Retinoschisis is not associated with changes in RPE unless an outer tear change

6% of retinoschisis has associated retinal detachment = outer wall break to allow fluid into SRS

Outer wall holes may be single or multiple, and they may be small or large. They appear as retinal holes with smooth, rounded margins and rolled edges. Inner holes are rare and harder to diagnose due to the variations in the thickness of the inner retinal layer.

Bilateral..... Tx? Barrier laser? Vitrectomy & scleral buckling?

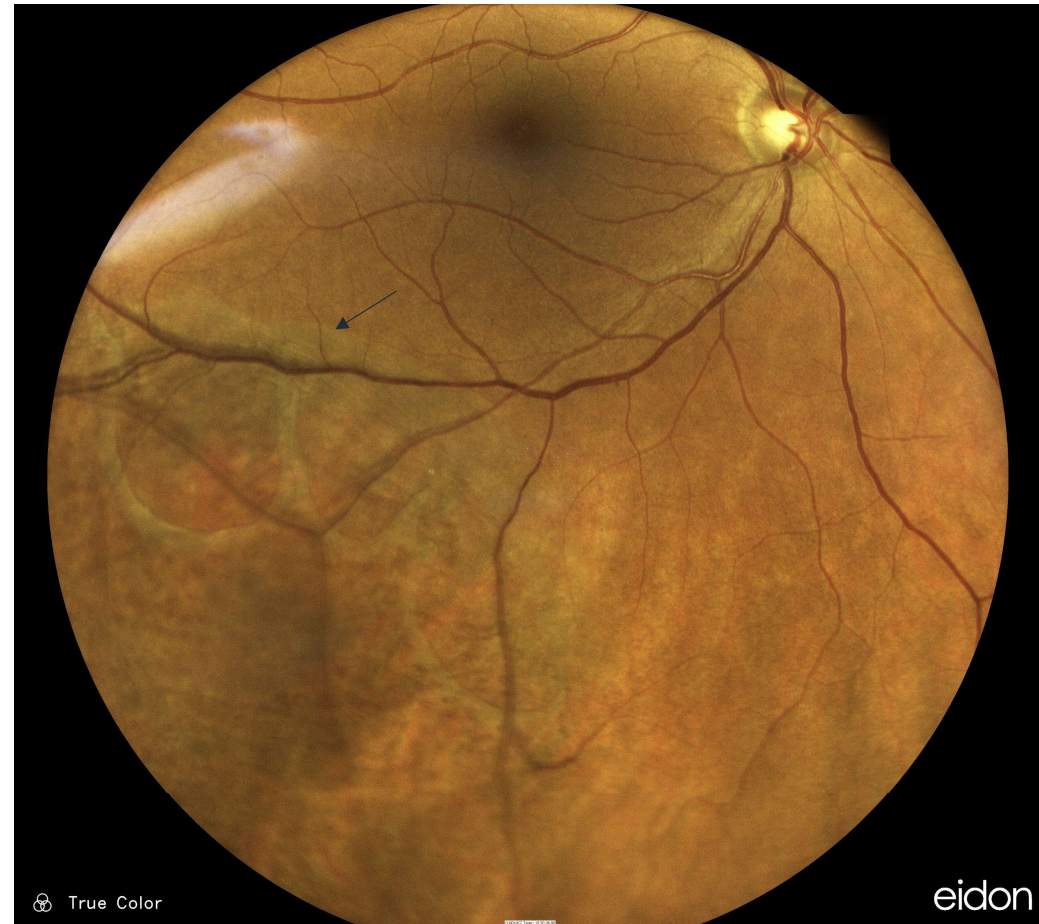


Mr. K.R. aet 65
review new readers
Hyperopia R 6/7.5 L 6/6
asymptomatic



On examination I felt clinically he had a peripheral schisis, however when we attempted a confirmatory OCT scan, it was evident that whilst he did have a peripheral retinoschisis, there was a leading edge of sub-retinal fluid likely indicating a communicating inner and outer leaf break situation. I could detect no obvious posterior vitreous detachment.

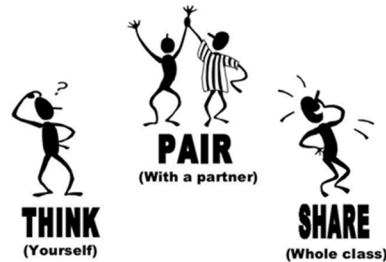
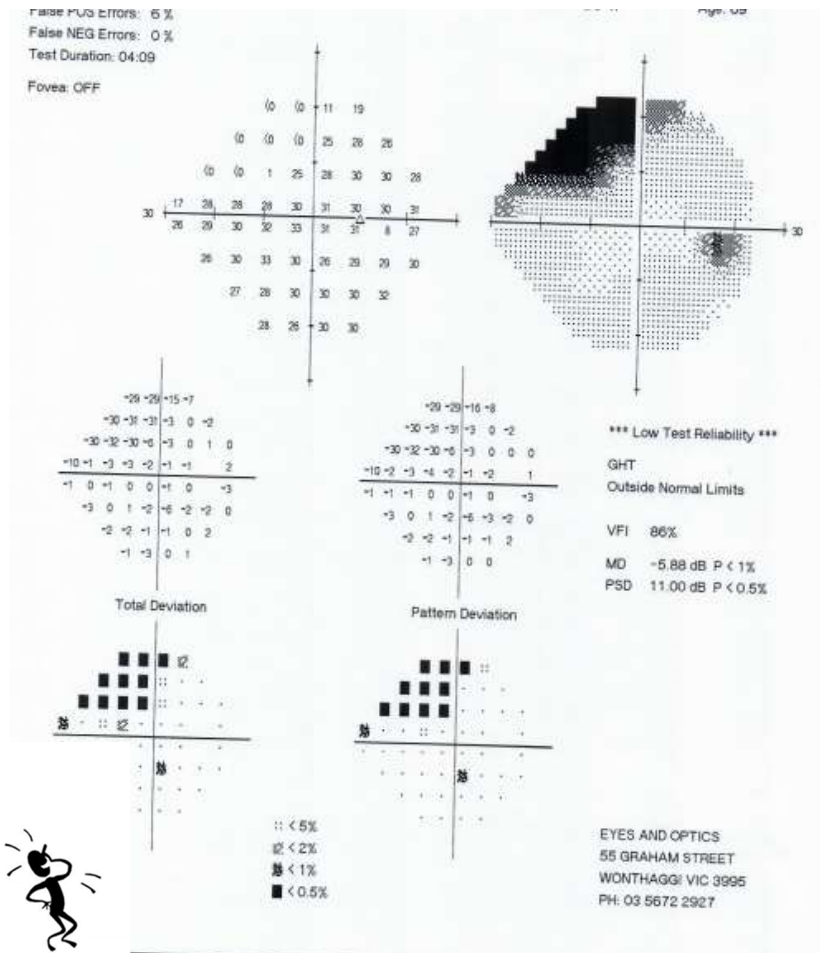
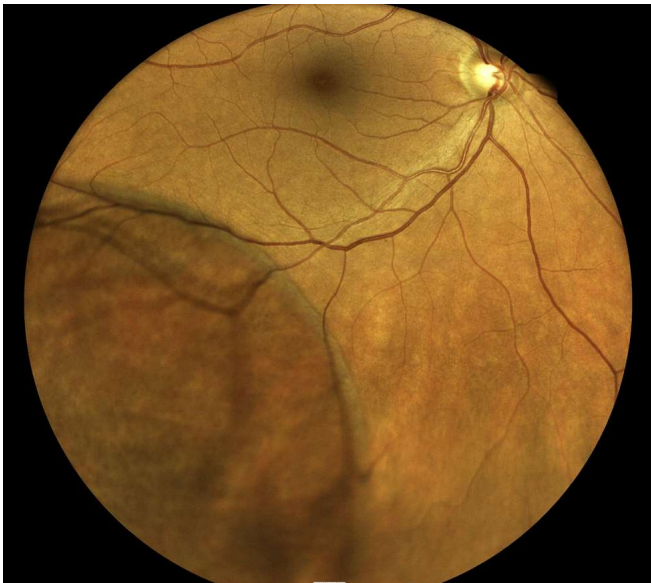
I have suggested in the first instance that we monitor things closely, however Mr [REDACTED] is aware that some barrier retinopexy and/or surgery may be required. I have made arrangements to see him in [REDACTED]

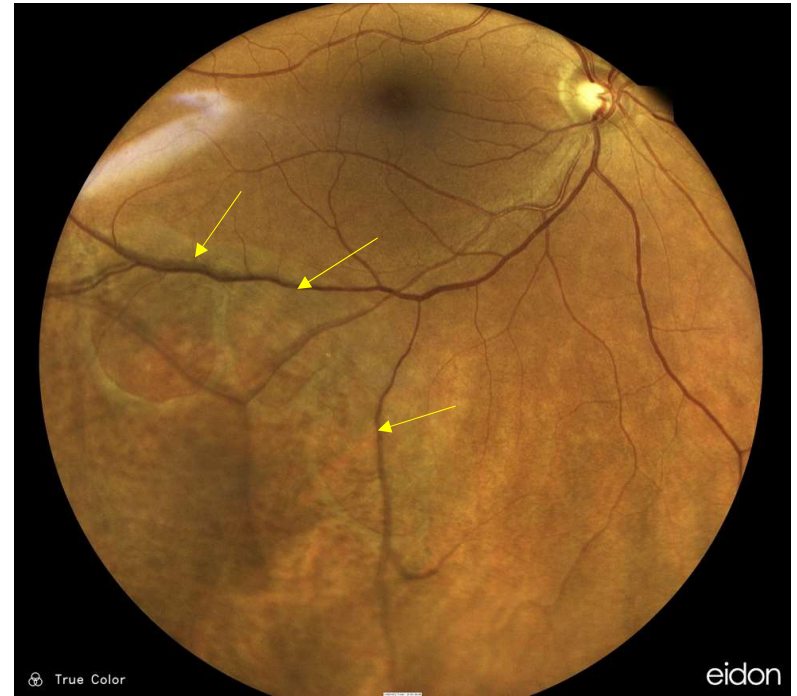
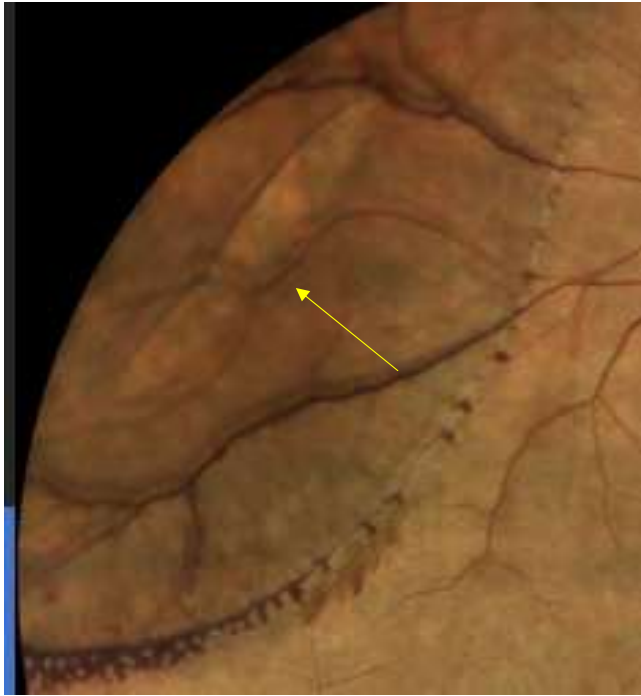


These images are 3 years apart 30-1-17 & 9-6-20
69 yo what's her Rx? What can you see?
Round atrophic holes = inner leaf break?

Where's the scotoma?

- A infero temporal
- B supero temporal
- C Infero nasal
- D supero nasal ✓





Inner leaf breaks? intraschisis fluid flows into the vitreous and schisis flattens

Mrs. I.D. aet 57

Blepharoplasty 2016

Vitreous haem 2018

Routine eye examination

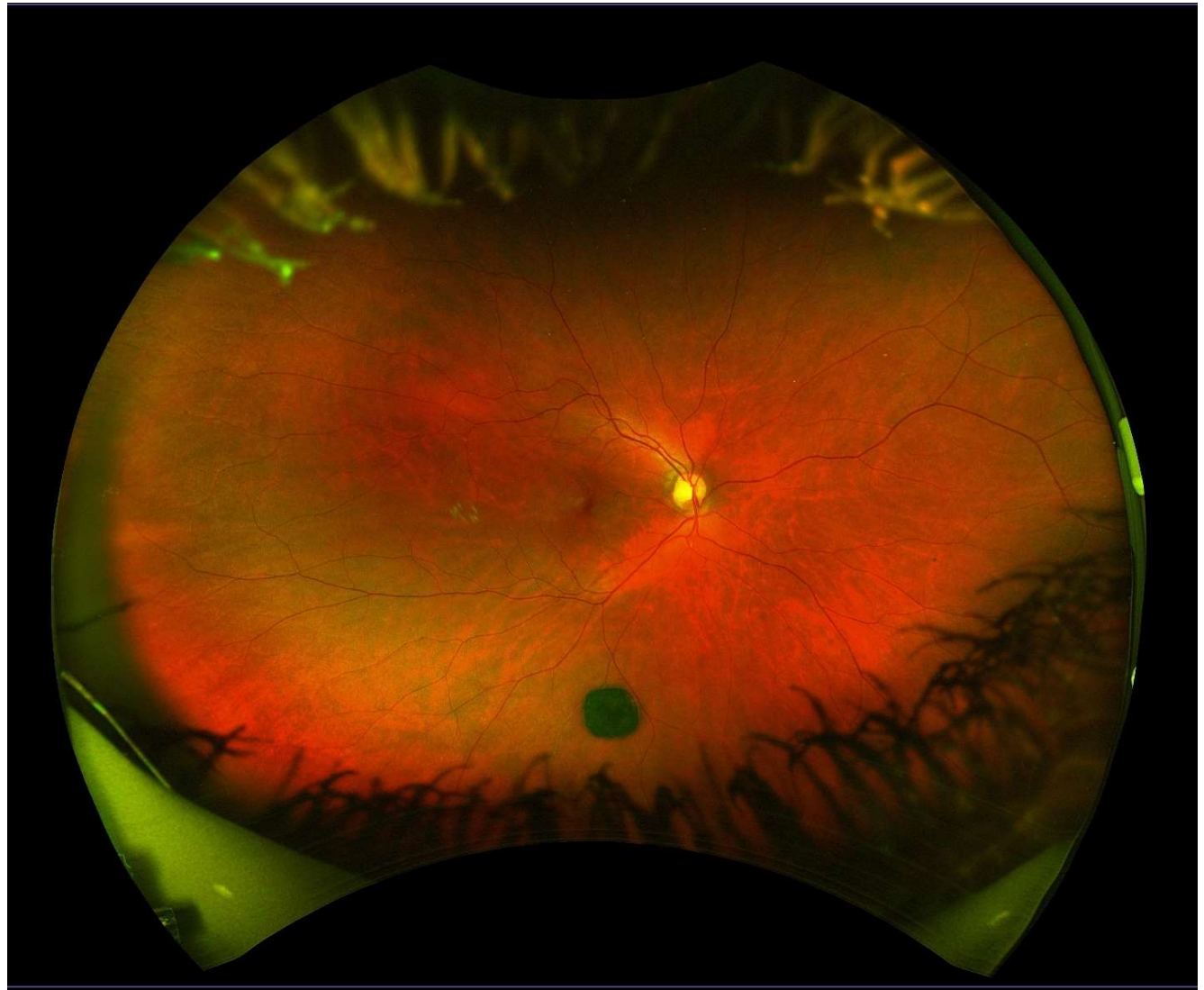
Even grey circular 2DD lesion

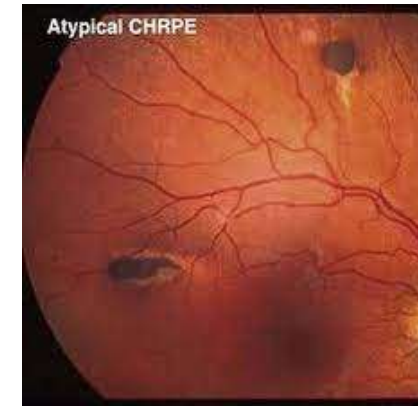
Flat?

No comment from either

Ophthalmologist

CHRPE





Single	Grouped	Atypical (familial adenomatous polyposis (FAP))
"regular & Round" shape	Regular, round, multiple	Bilateral 78%
	Bear track	Retinal invasion
		90% colorectal Ca
		Retinal vascular changes

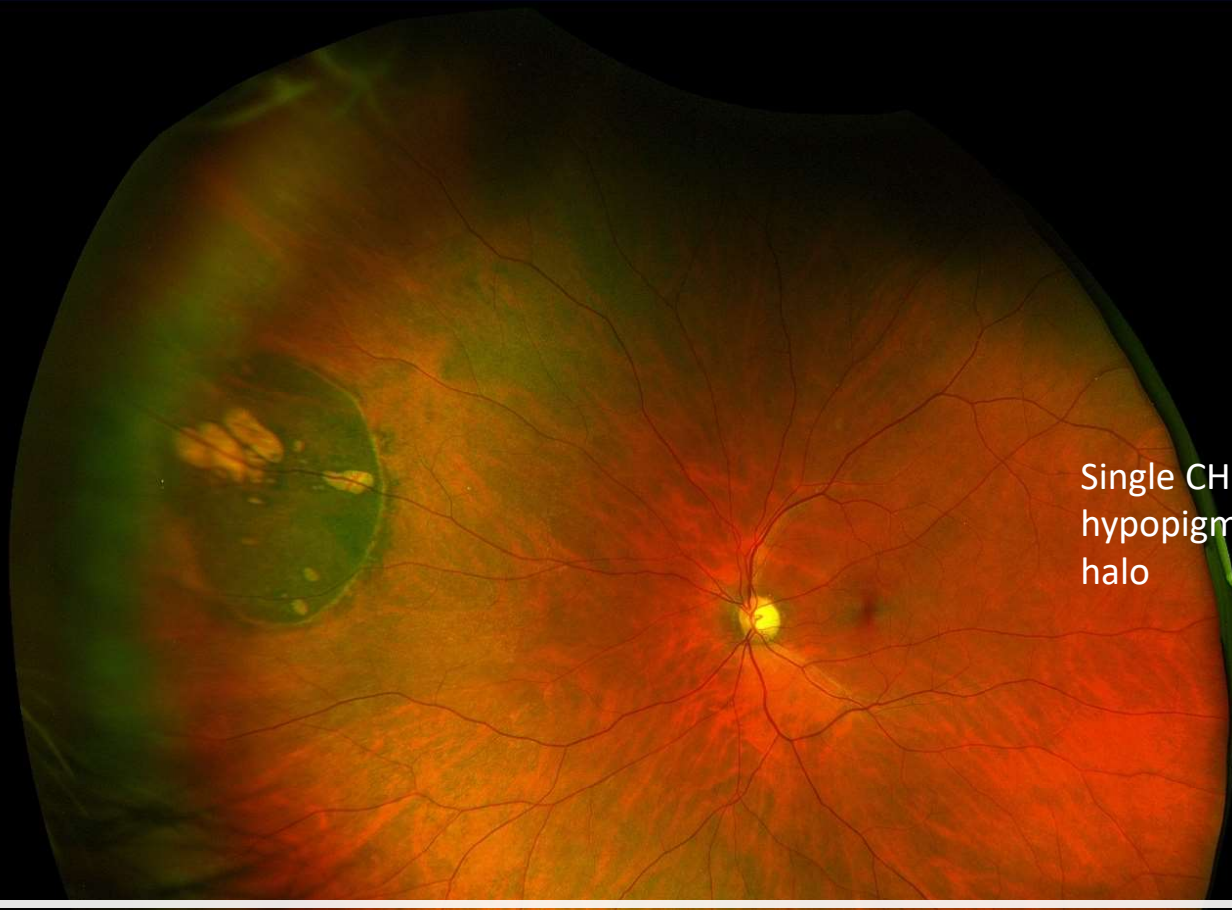
Congenital hypertrophy of the retinal pigment epithelium (CHRPE)

1.2-4.4%

All can have depigmented haloes or lacunae

Hypo autofluorescence due to melanin

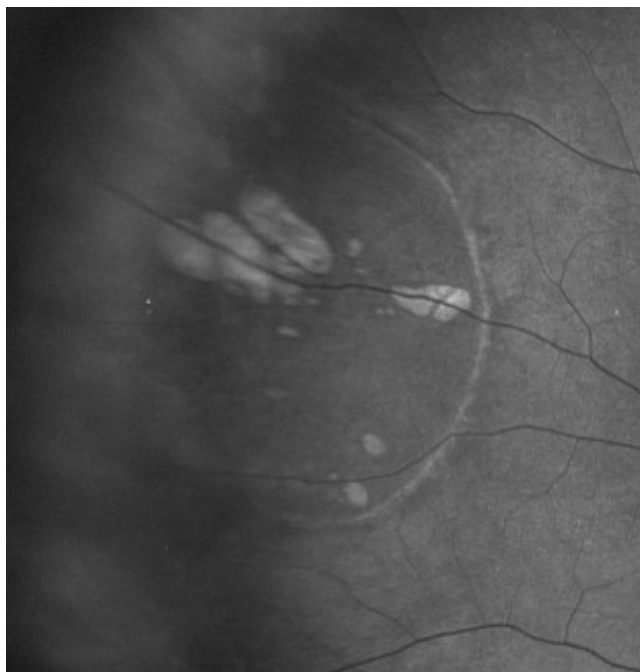
Can grow



Single CHRPE with atrophic
hypopigmented lacunae &
halo

Mr. D.E. aet 54

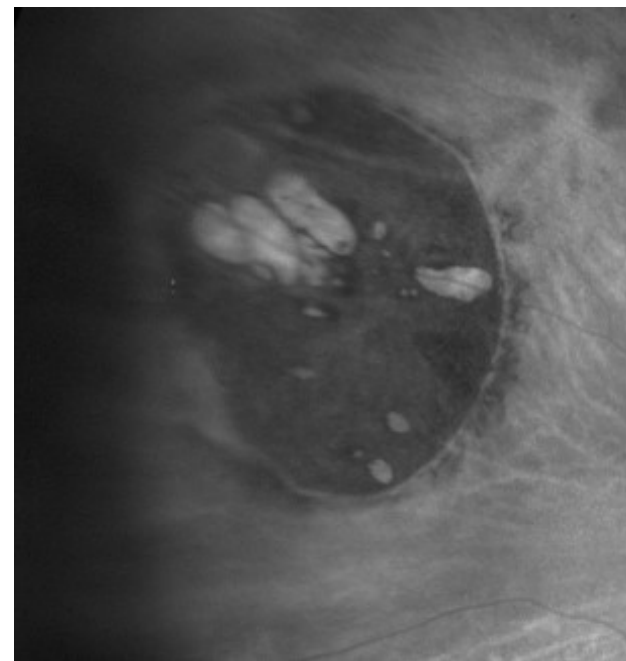
Optos CHRPE



100% green - retina



FAF no autofluorescence



100% red - choroid

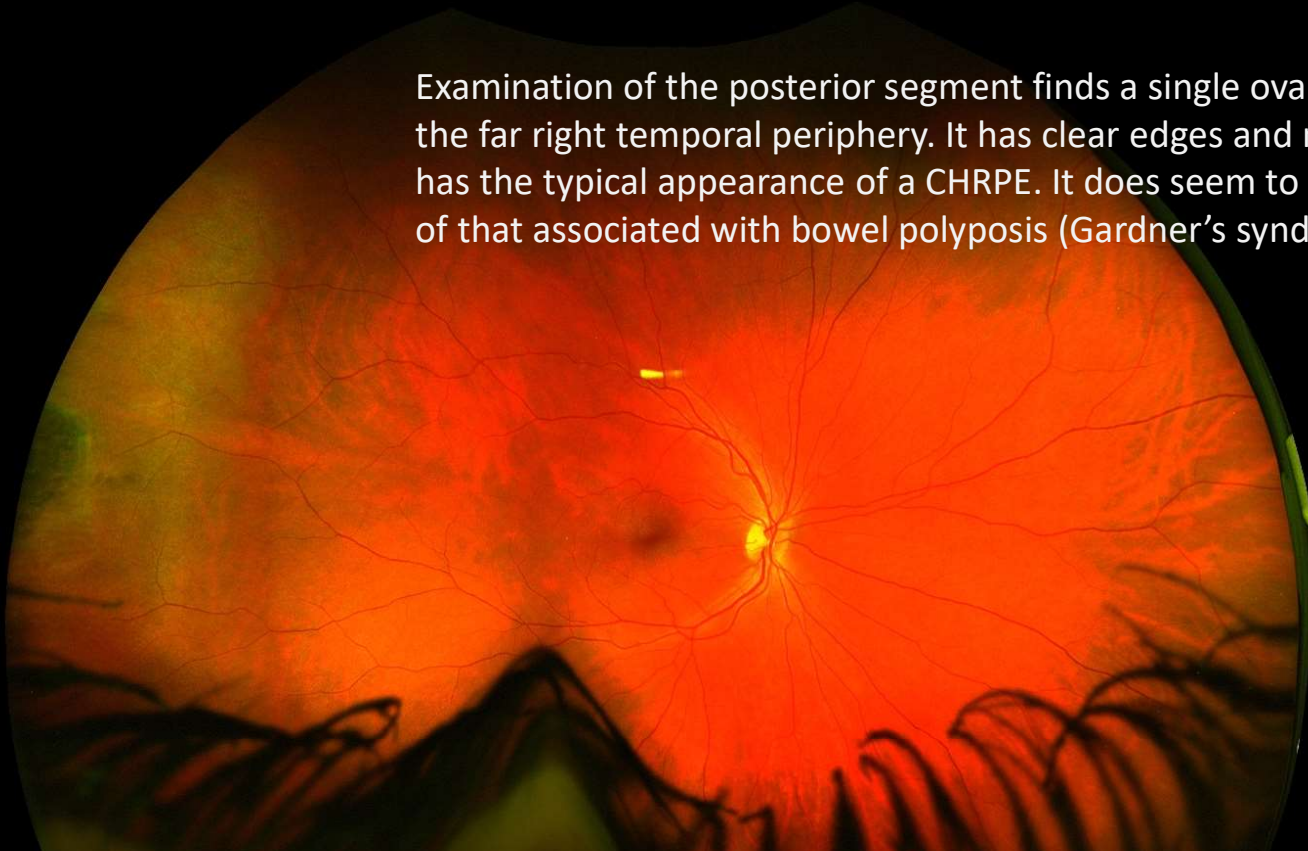


Mr. J.C. aet 36
routine EE asymptomatic



Thanks for referring this 36 year old gentleman who is an asymptomatic myope in whom you found an abnormality in his right eye. Indeed he has quite a large relatively uniform hyperpigmented area with scalloped borders in the temporal periphery of his right eye. This doesn't appear to have any particular height to it and clinically appears to be more hyperpigmentation at the level of the RPE rather than the choroid as such.

Examination of the posterior segment finds a single oval pigmented lesion in the far right temporal periphery. It has clear edges and no lacunae as yet & has the typical appearance of a CHRPE. It does seem to have the morphology of that associated with bowel polyposis (Gardner's syndrome)



Mrs. B.B. aet 36 routine review asymptomatic UVA 6/6 OU

CHRPE vs melanoma

OPTOMETRY

May 01, 2005

Differential diagnosis of ocular melanoma vs. choroidal nevus is crucial By Jennifer Byrne



	Melanoma	Choroidal Naevus	CHRPE
Optomap 100% Red Choroid only	Visible & dark	Visible & dark	Halo & lacunae obvious hyperpigmented
Optomap 100% green retina only	Dark & fuzzy edges	Not visible	Halo & lacunae obvious Less pigmented
3D	elevated	Flat, can have halo	SI raised
vascularity	Own circulation (FA takes up more dye = metabolic activity)		
appearance	Raised, vascular? Subretinal fluid, orange	Drusen = chronicity	Surrounding halo & lacunae
associations	Dermal melanoma		Colon cancer (FAP)



Distinguishing a Choroidal Nevus From a Choroidal Melanoma

February 2012

Written By: Albert Cheung, Ingrid U. Scott, MD, MPH, Timothy G. Murray, MD, and Carol L. Shields, MD
Edited by Ingrid U. Scott, MD, MPH, and Sharon Fekrat, MD

To Find Small Ocular Melanoma Using Helpful Hints Daily” (TFSOM-UHHD) has been proposed. This stands for **thickness** greater than 2 mm, subretinal **fluid**, **symptoms**, **orange** pigment present, **margin** within 3 mm of the optic disc, ultrasonographic **hollowness** (versus solid/flat), absence of **halo** and absence of **drusen**.

BMES Choroidal naevi 6.5% middle aged white Australians
Choroidal melanoma 6 per million

The MOLES System for Planning
Management of Melanocytic
Choroidal Tumors: Is It Safe?
Domato et al



Cancers (Basel), 2020 May; 12(5): 1311.
Published online 2020 May 21. doi: [10.3390/cancers12051311](https://doi.org/10.3390/cancers12051311)

PMCID: PMC7281649
PMID: [32455720](https://pubmed.ncbi.nlm.nih.gov/32455720/)

Risk Factor	Severity	Score
Mushroom shape	Absent	0
	Unsure/Early growth through RPE	1
	Present	2
Orange pigment	Absent	0
	Unsure/Trace (i.e., Dusting)	1
	Confluent clumps	2
Thickness & Diameter		
Large Size	Thickness <1.0 mm ('flat/minimal thickening') and diameter < 3DD	0
	Thickness = 1.0–2.0 mm ('subtle dome shape') and/or diameter = 3–4 DD	1
	Thickness >2.0 mm ('significant thickening') and/or diameter > 4DD	2
Enlargement	None (or lesion not documented or mentioned to patient previously)	0
	Unsure (i.e., Poor image quality)	1
	Definite (confirmed with sequential imaging)	2
Subretinal fluid	Absent	0
	Trace (if minimal and detected only with OCT)	1
	Definite (if seen without OCT)	2
Total Score		

MOLES Score	Suggested Management
0 = Common naevus	Monitoring in community with color photography every 1–2 yrs.
1 = Low-risk naevus	Non-urgent referral for specialist investigation comprising wide-field photography, autofluorescence imaging, optical coherence tomography and, in selected cases, ultrasonography.
2 = High-risk naevus	Subsequent surveillance to be undertaken at a specialist clinic or in the community according to risk of malignancy.
3 = Probable melanoma	Urgent referral to ophthalmologist with urgent onward referral to ocular oncologist if suspicion of malignancy is confirmed.

N=615 Jan 2017 to Dec 2019 Dx Choroidal melanoma

All but one (0.2%) had MOLES scores of ≥ 3 .

Rod O'day Moorfields n=500 none with Mushroom shape (penetrates through Bruch's)

The MOLES scoring system is a sensitive (99.8%) tool for indicating malignancy in melanocytic choroidal tumors (MOLES ≥ 3). If the examining practitioner can recognize the five features suggestive of malignancy, MOLES is a safe tool to optimize referral of melanocytic choroidal tumors for specialist care.

Cases I thought were definitely Melanomas



Key messages



- Most will be Naevi
- OCT Lipofuscin on surface RPE C/F drusen b/n RPE & Bruchs
- FAF lipofuscin= hyperfluoresence c/f Naevus with drusen?
- Drusen has hypofluorescent centre
- Ocular melanoma Fun facts
 - not related to UV or sun exposure
 - Light coloured eyes
 - 5-10 per million

Quiz Which is true regarding acquired retinoschisis



- 1 Inner leaf breaks have a pigmented edge
- 2 retinoschisis typically only occurs in one eye
- 3 Outer leaf breaks are mostly benign and do not need treatment
- 4 Retinoschisis are not uncommon amongst hyperopes & create positive scotomas
- 5 PVD and retinoschisis = rRD



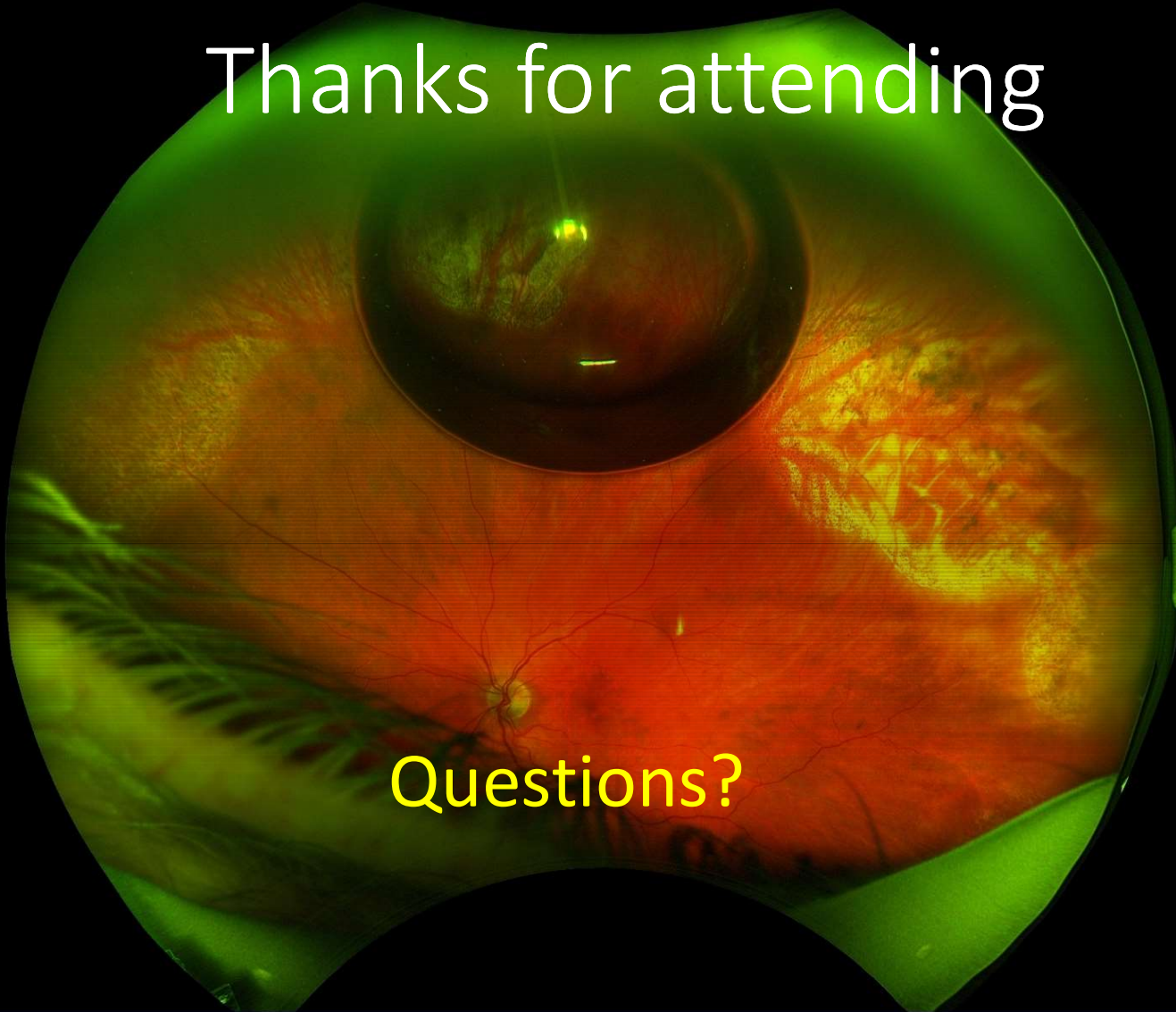
Quiz A solo flat, pigmented lesion is found in the temporal periphery of one eye. It has both hypopigmented lacunae and a halo. Appropriate course of action is

- a/ Image the lesion and review in 6 months
- b/ Assess for FAF hypoautofluorescence with normal fluorescence of only the lacunae & halo
- c/ Refer to GP on suspicion of Gardner's syndrome
- d/ Refer to retinal Ophthalmologist as they are difficult to tell between typical & atypical
- e/ all of the above



Thanks for attending

Questions?



References

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- Peak occurrence of Retinal detachment following cataract surgery: A systematic review & pooled analysis with Internal validation R Kassem et al J Ophthalmol. 2018 Nov 22;2018:9206418. doi: 10.1155/2018/9206418. eCollection 2018
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- Review of Ophthalmology Managing patients after retinal Surgery Annisa L. Jamil, MD, Seattle 13th August 2009
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- Review of Optometry Diagnosis is on the Line Pigmented and nonpigmented demarcation lines in both eyes hold the clues to this patient's condition Mark T. Dunbar OD 24th October 2006
- Optometry Differential diagnosis of Ocular melanoma vs. choroidal nevus is crucial Jennifer Byrne OD 1st May 2005
- Distinguishing a Choroidal Nevus From a Choroidal Melanoma Albert Cheung, Ingrid U. Scott, MD, MPH, Timothy G. Murray, MD, and Carol L. Shields, MD Edited by Ingrid U. Scott, MD, MPH, and Sharon Fekrat, MD February 2012
- Cancers MDPI The MOLES System for Planning Management of Melanocytic Choroidal Tumors: Is It Safe? Domato et al May 2020