

Why be involved in Glaucoma management?

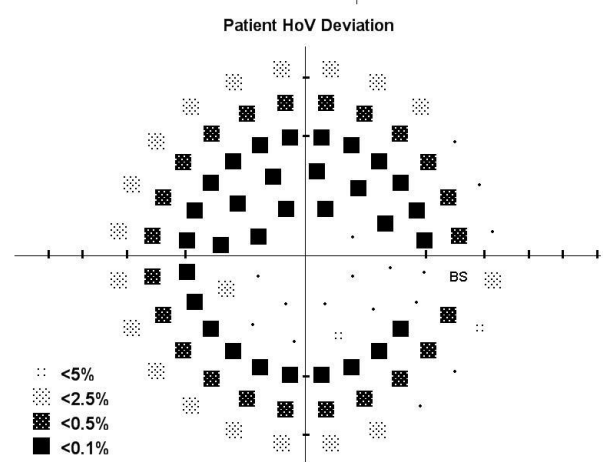
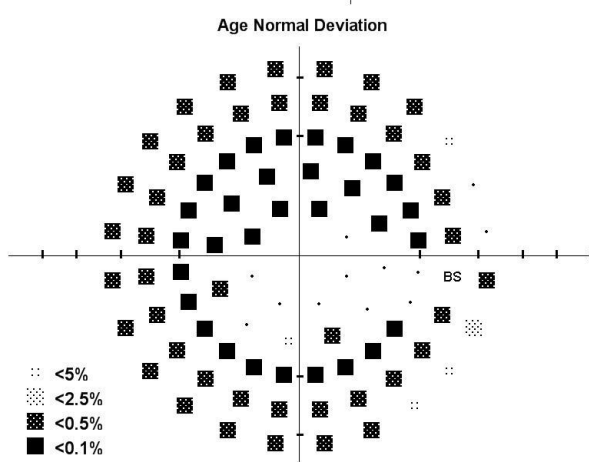
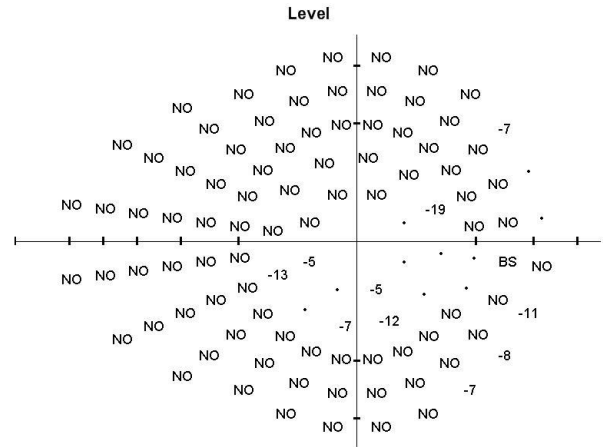
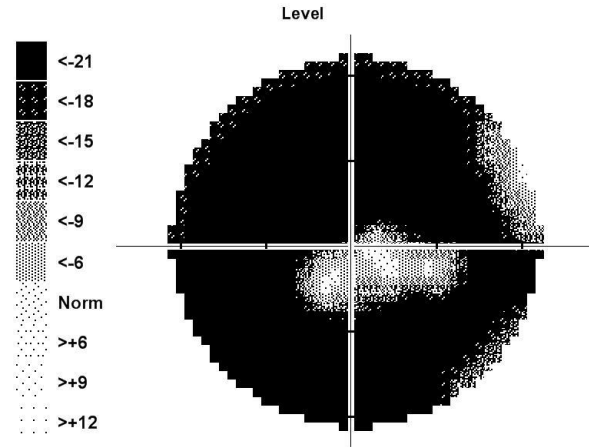
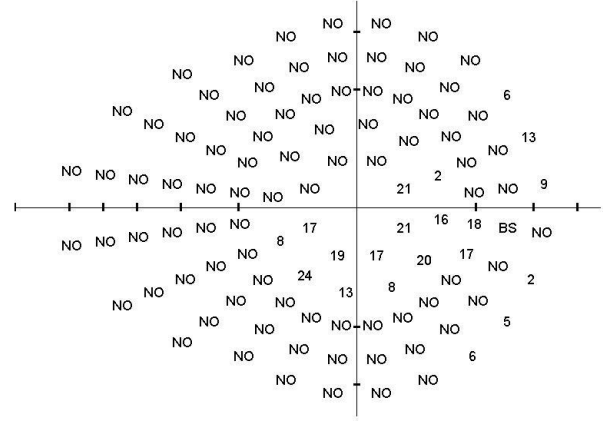
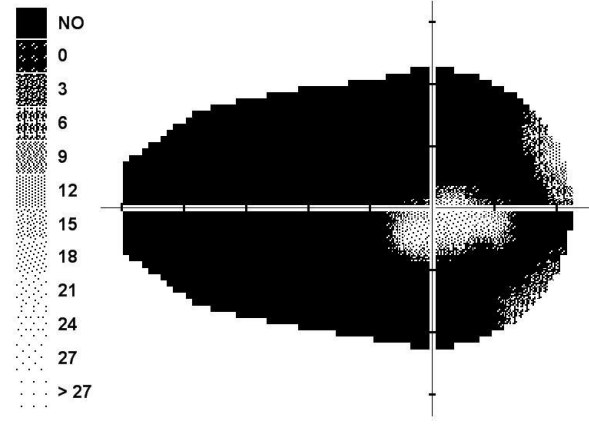


Case 1

- 70 year old man presents for his first formal eye examination
- Referred by GP due to his type II diabetes
- Unaided VA 6/9 6/9
- Sluggish pupil responses but no RAPD
- SL exam VH open typical age cataract
- IOP 20mmHg right and left
- Walked a bit odd down the corridor?







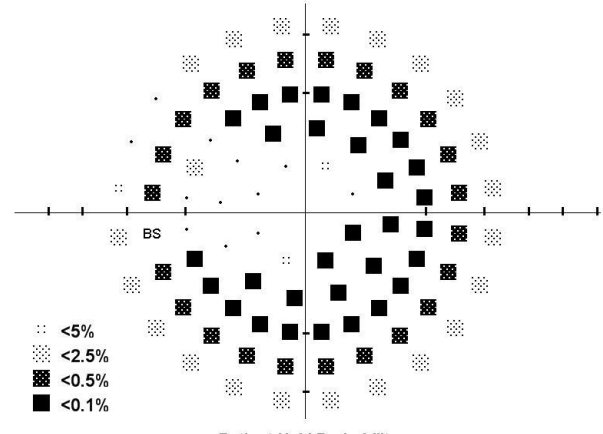
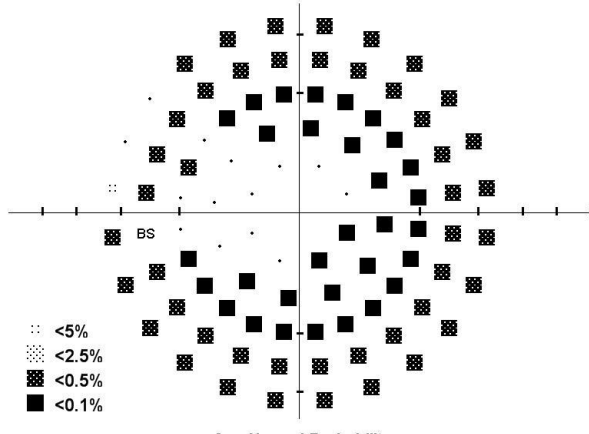
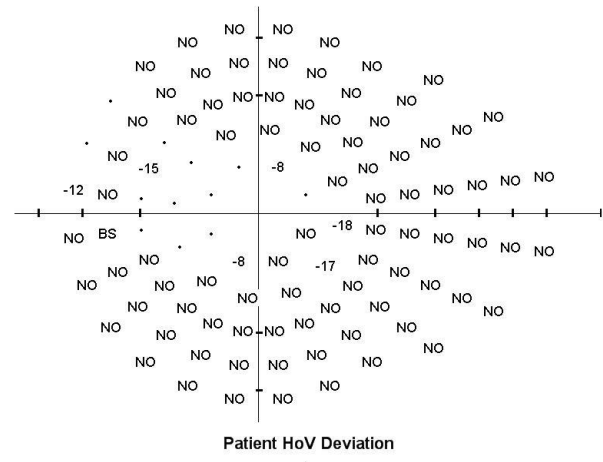
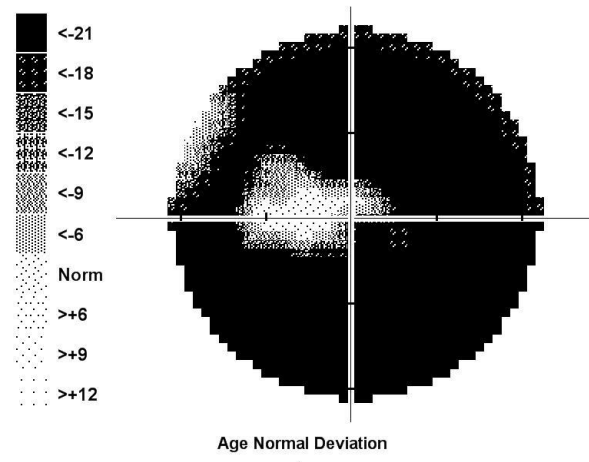
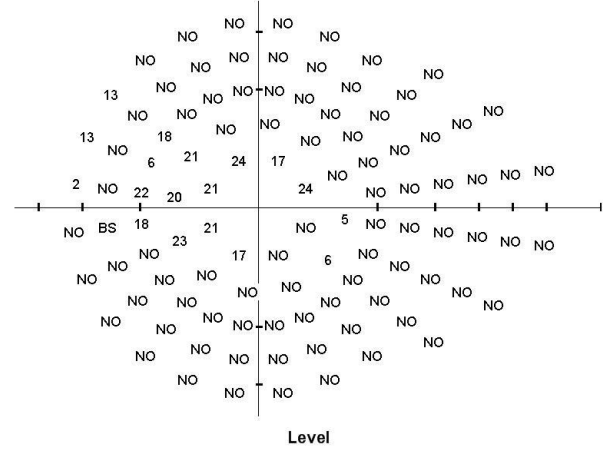
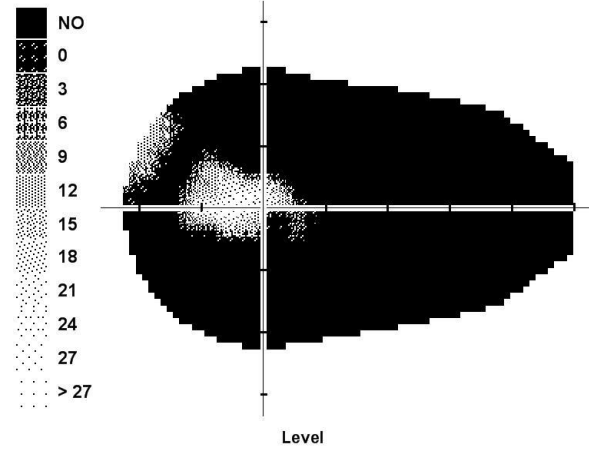
Age Normal Probability

Fixation Loss: 8/35=23% Fair
 False Positives: 0/29=0% Excellent
 False Negatives: 3/14=21% Good

Patient HoV Probability

Fluctuation: Disabled
 Pattern Defect: 17.24 ***
 Overall Defect: -3.30 *

HoV Slope: 4.4 dB/10°
 HoV 3° Level: 21.7 dB
 Cluster Analysis: Superior Defect



Fixation Loss: 0/32=0% Excellent
 False Positives: 0/29=0% Excellent
 False Negatives: 7/14=50% Poor

Fluctuation: Disabled
 Pattern Defect: 18.58 ***
 Overall Defect: -1.32

HoV Slope: 5.9 dB/10°
 HoV 3° Level: 24.9 dB
 Cluster Analysis: Inferior Defect

RMM Glaucoma?

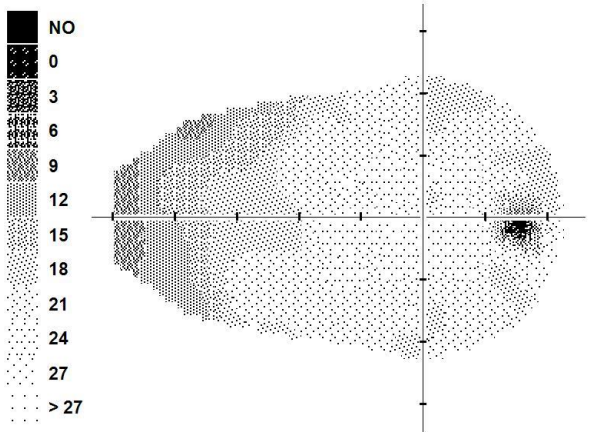
- Glaucoma diagnosis at end stage
- Diagnosis delayed by avoiding eye care
- It could be argued that despite advances in diagnostic testings for early glaucoma, the ready made magnifier has created an environment where glaucoma detection is worse than it was 20 years ago.

Case 2 – Ocular Hypertension?

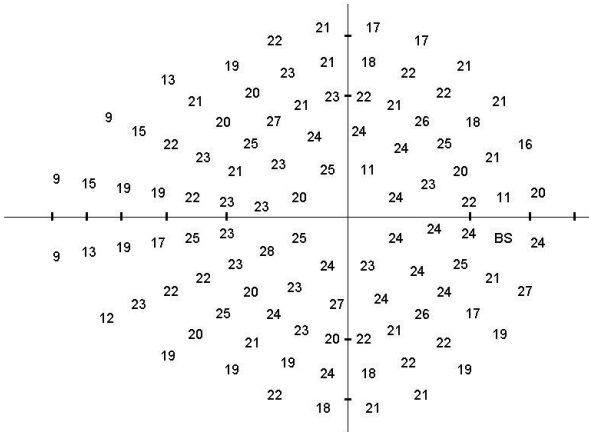
- Jan in 2007 had 23 IOP and no field loss
- CCT: Right 575 μ Left 577 μ
- CDR 0.7 right and left
- HRT (ophthalmologist) was borderline
- Diagnosis Ocular hypertension monitor closely
- Seven years later Jan developed a repeatable field defect in the left eye

2014 Treatment for POAG

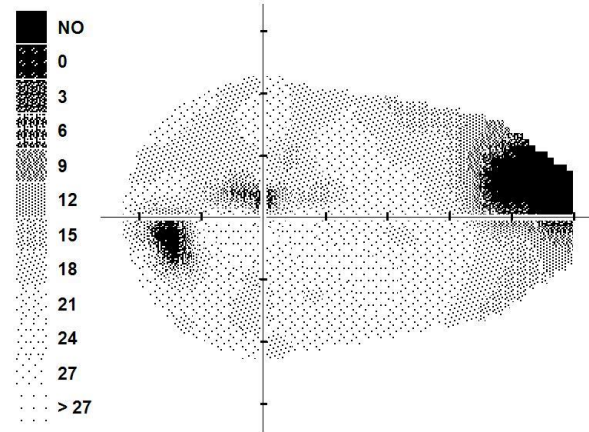
- NHMRC guidelines support minimum 20% IOP reduction in early POAG. Making target IOP 19mmHg
- SLT and Duotrav(travoprost/timolol)
- Combigan(brimonidine/timolol) and Lumigan
- IOP is 25 right and left
- Mild irritation -> Cosopt(dorzolamide/timolol) and Lumigan PF
- December 2015 IOP is 20mmg right and left



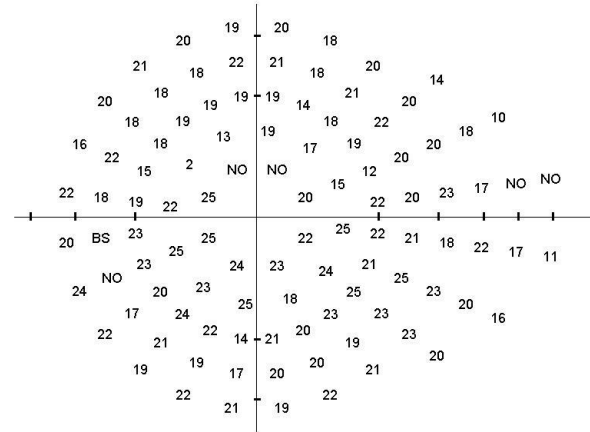
Level



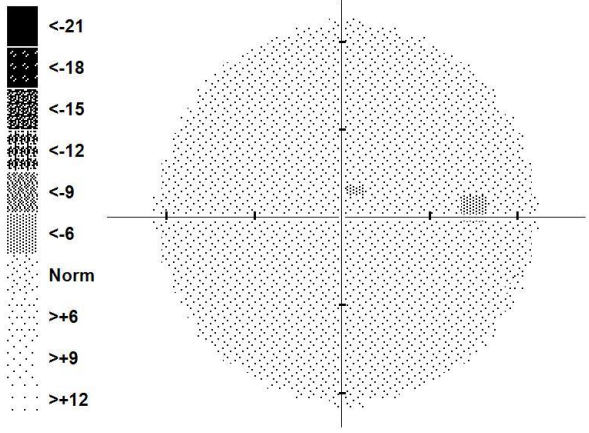
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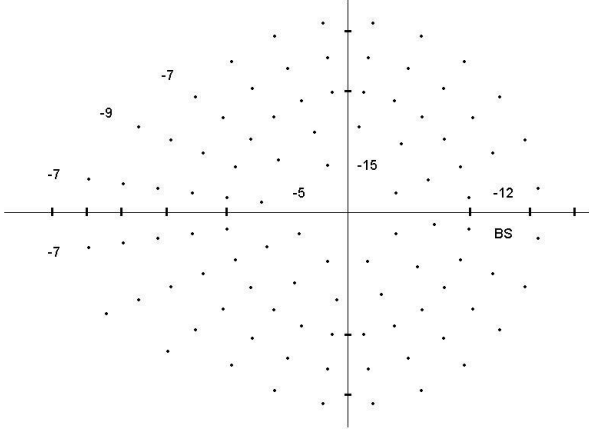
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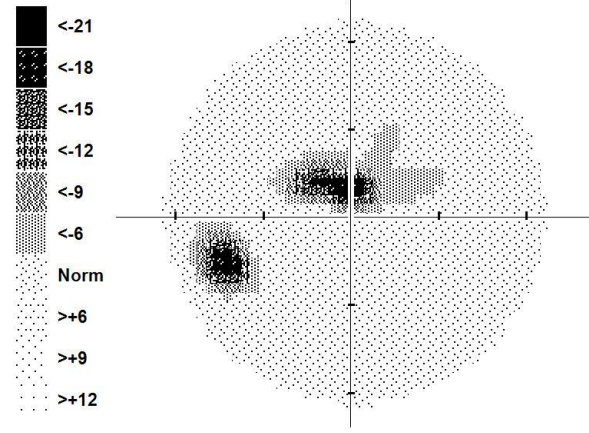
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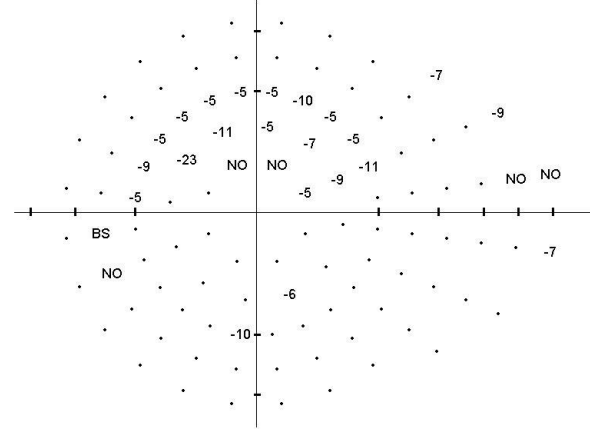
Age Normal Deviation



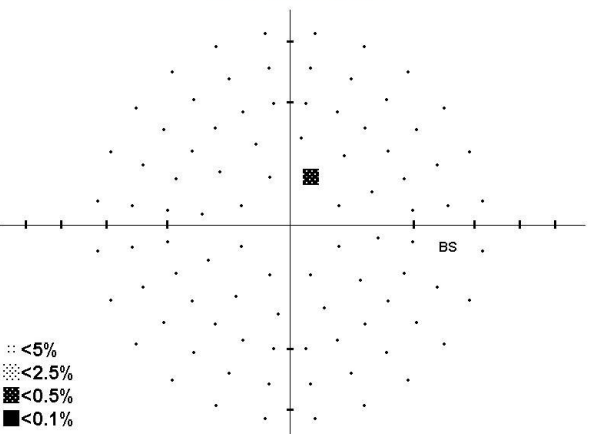
Patient HoV Deviation



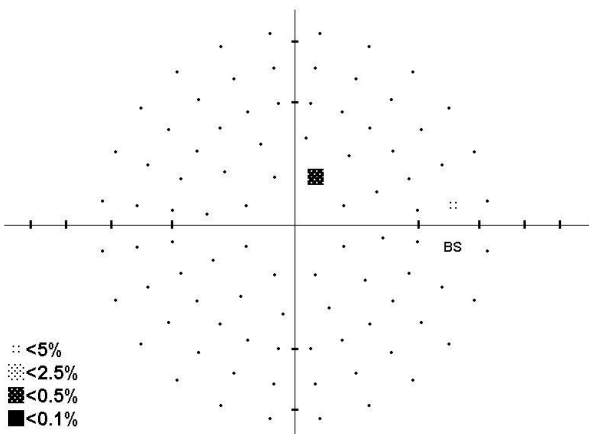
Age Normal Deviation



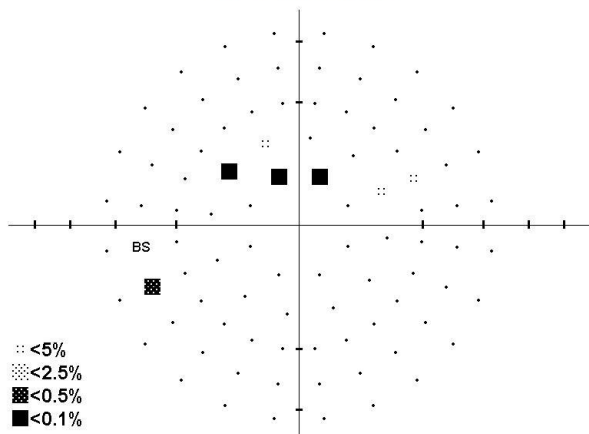
Patient HoV Deviation



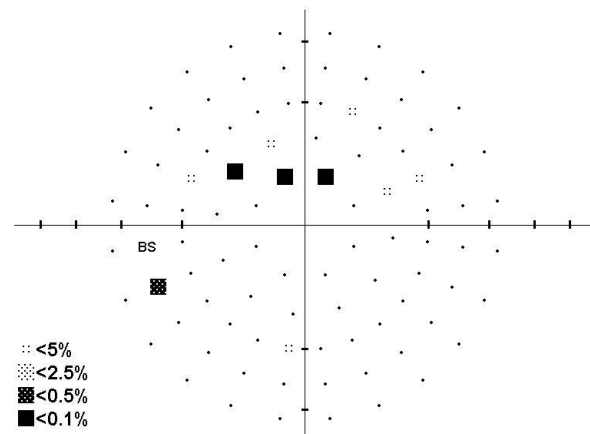
Age Normal Probability



Patient HoV Probability



Age Normal Probability



Patient HoV Probability

OD(R)

Image Quality : **33** mode : Fine(2.0.0)
Capture Date : 10/12/2015

mode : Fine(2.0.0) Image Quality : **46**
Capture Date : 10/12/2015

OS(L)

SuperPixel-200

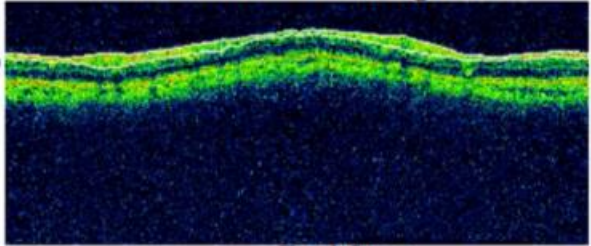
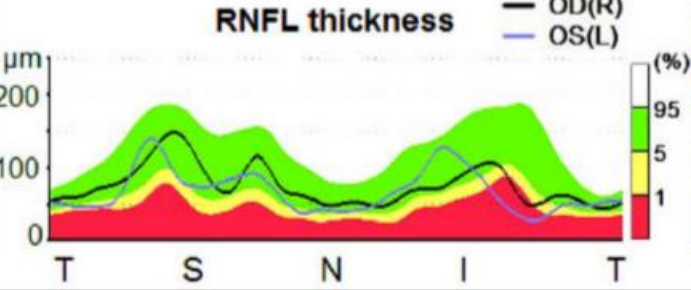
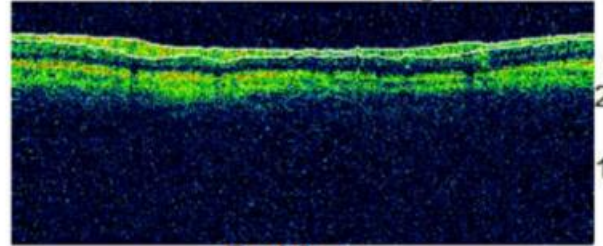
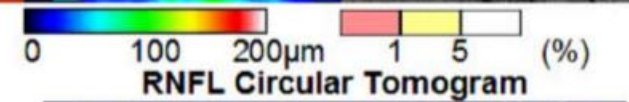
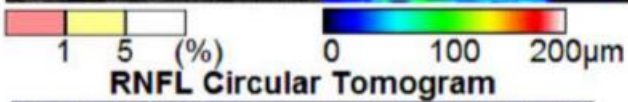
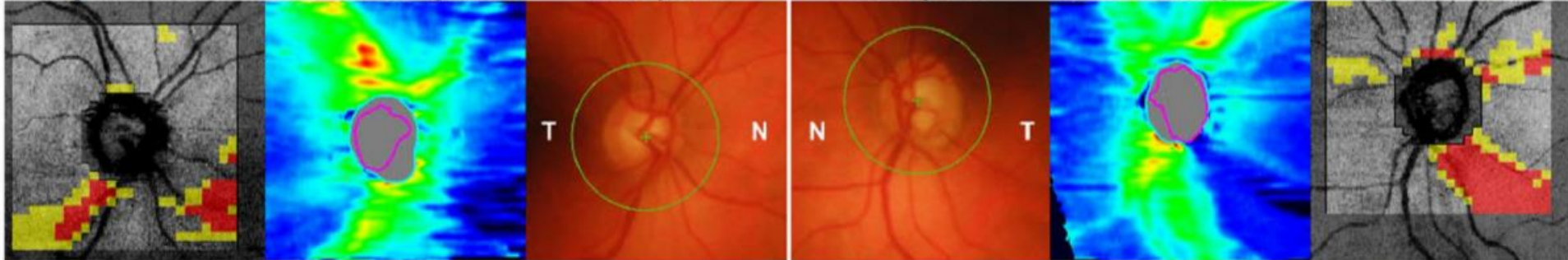
Thickness Map RNFL

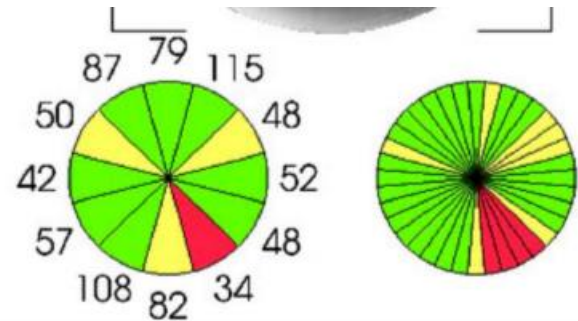
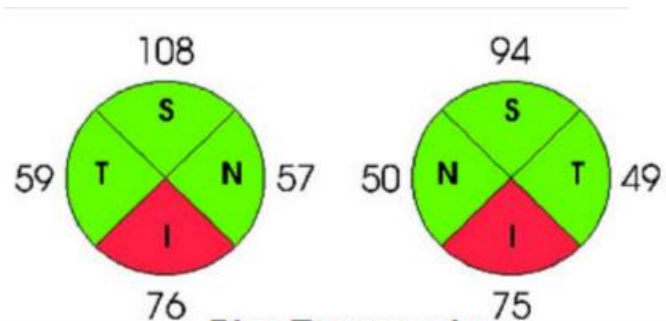
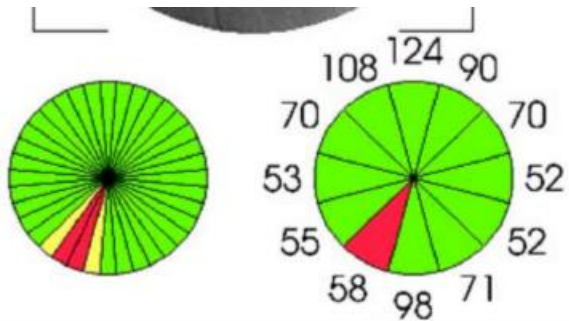
Color photo

Color photo

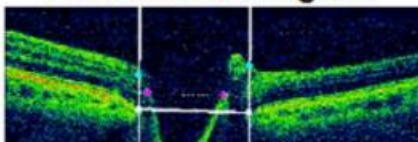
Thickness Map RNFL

SuperPixel-200





Horizontal Tomogram



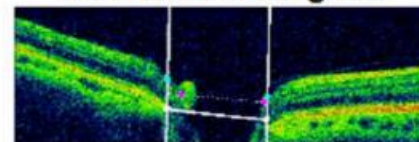
Disc Topography			
2.50	Disc Area	(mm ²)	2.17
1.26	Cup Area	(mm ²)	1.54
1.24	Rim Area	(mm ²)	0.63
0.50	C/D Area Ratio		0.71
0.71	Linear CDR		0.84
0.75	Vertical CDR		0.95
0.37	Cup Volume	(mm ³)	0.45
0.32	Rim Volume	(mm ³)	0.10
1.62	Horizontal D.D	(mm)	1.45
2.02	Vertical D.D	(mm)	1.89

R/D Ratio — OD(R)
— OS(L)

1.0



Horizontal Tomogram



7th June 2016

- Both eyes itchy around eye lashes, skin around the eyes red and puffy.
- Eyes themselves are not inflamed
- IOP 20 right 26 left
- Rang ophthalmologist to discuss options given IOP and signs. He suggested Xalatan for Lumigan and stay on Cosopt
- If that fails he suggest Simbrinza for Cosopt

14th June 2016

- Jan rang me in tears “Really miserable”
- Red raw looking lower lids
- NaFl no staining of the cornea
- IOP 22 right and 26 left
- Cease Cosopt and resume Lumigan PF
- Suspicious of dorzolamide in Cosopt and not willing to try Simbrinza (brinzolamide and brimonidine)

21st June 2016

- Dramatic improvement off the Cosopt
- IOP 26 right and left
- Tolerating Lumigan PF well
- Try restarting Combigan as it caused only mild irritation in 2015.

July 2016

- Restarting Combigan (brimonidine and timolol) was unsuccessful, red skin again in 24 hours. Self managed by ceasing it.
- Lumigan PF at night
- IOP 26 right and 28 left
- Right IOL and iStent booked for August
- Report to ophthalmologist IOP and medication

November 2016

- Right IOL and iStent procedure
- IOP 18 right and 19 left
- Lumigan PF only at night
- Ophthalmologist replaces Lumigan PF with Ganforte PF (bimatoprost and timolol) and does not want to see her for a year.

December 2016

- After one night of Ganforte eyes puffed up red itchy and Jan ceased it. Gone back to her supply of Lumigan PF
- IOP 20 right and 21 left
- Gave Jan 5 repeats for Lumigan PF

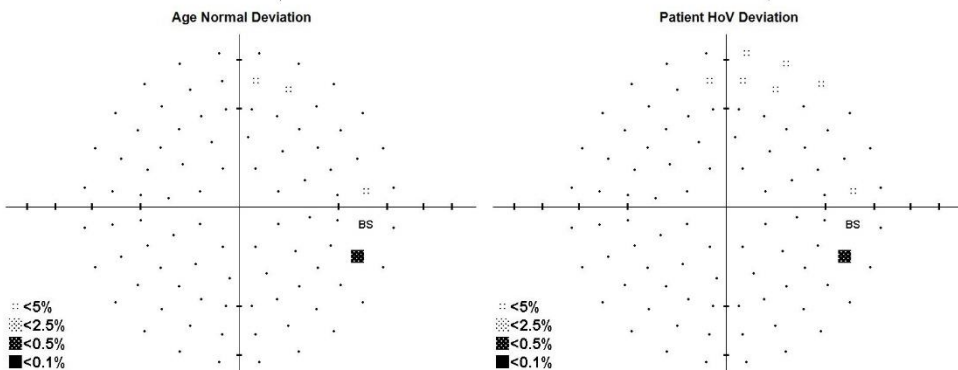
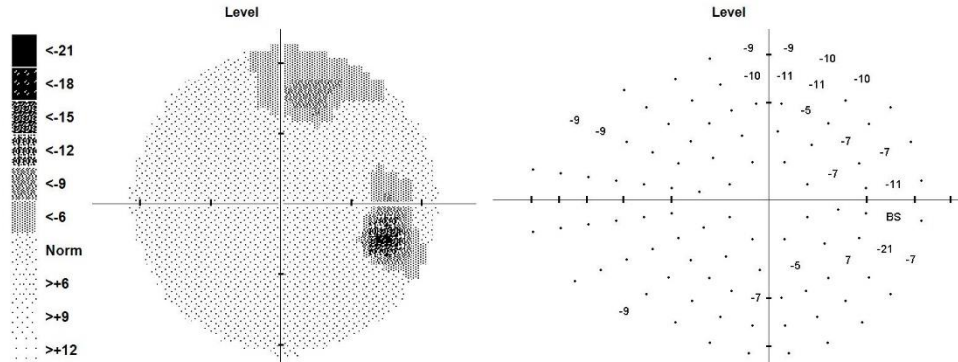
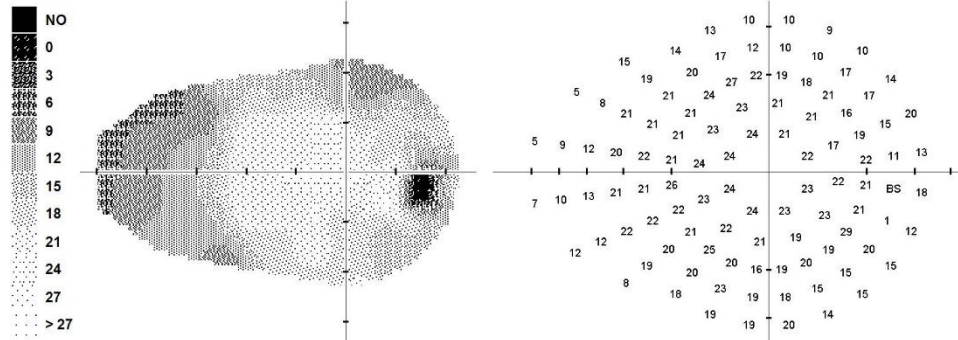
Periorbital dermatitis as a side effect of topical dorzolamide

- Delaney et al (ophthals and dermatologists)
- Br J Ophthalmol 2002;86:378–380
- A retrospective study of 14 patients who developed periorbital dermatitis while using topical dorzolamide hydrochloride
- “Although the dermatitis may resolve when dorzolamide is discontinued, this does not always occur and in some patients all topical medication containing benzalkonium chloride needs to be stopped.”

Case 3

- 83 year old woman “TV blurry” 2014
- Hx right IOL and trabeculectomy in 2001
- Has not seen an ophthalmologist for 3 years and gets her Rx – Xalacom (Latanoprost and Timolol) left only from GP
- VA 6/9= right and 6/19 left
- IOP 19 right and 26 left

Test: Glaucoma Test Date of Birth: 26/08/1930 Strategy: Fast Threshold
 Eye: Right Trials: 255/103=2.5 Flicker: OFF
 Age: 83 Years 10 Months Test Duration: 7 Min 36 Sec Lens: +3.00/+0.00x0

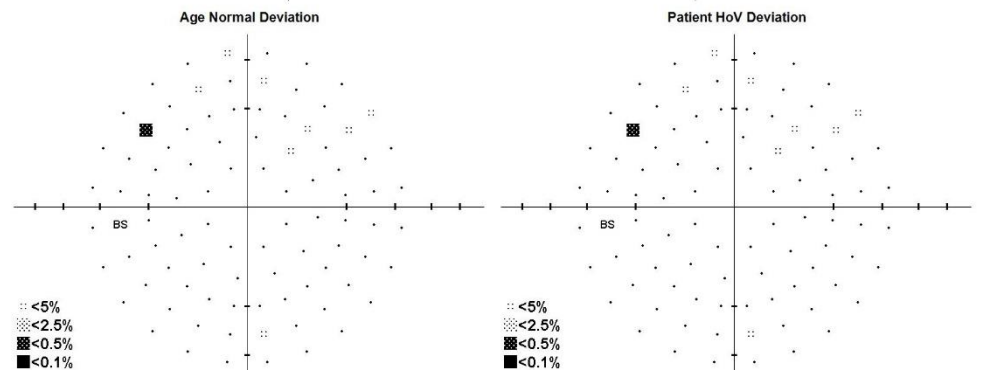
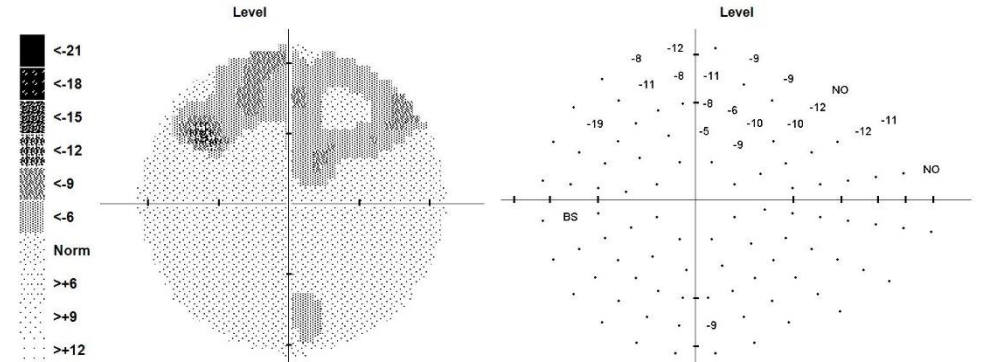
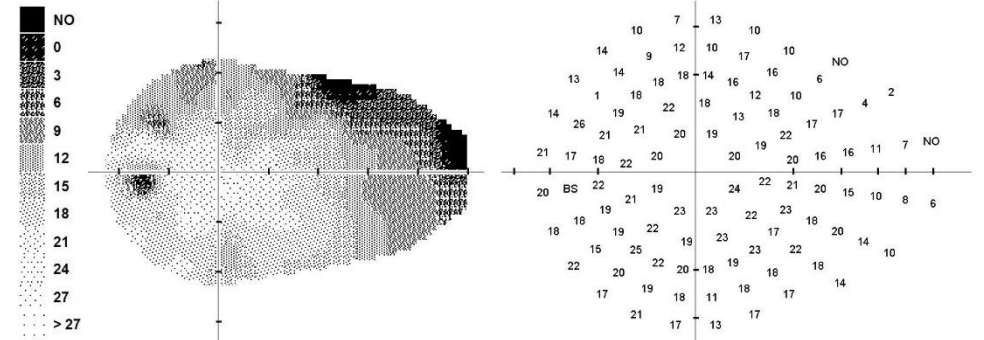


Age Normal Probability
 Fixation Loss: 4/31=13% Good
 False Positives: 0/25=0% Excellent
 False Negatives: 0/12=0% Excellent
 Fluctuation: Disabled

Age Normal Deviation
 Pattern Defect: 3.44 *
 Overall Defect: 0.67
 HFA MD: -2.56
 HFA PSD: 0.90

Patient HoV Probability
 HoV Slope: 2.9 dB/10°
 HoV 3° Level: 24.7 dB
 Cluster Analysis: Superior Defect

Test: Glaucoma Test Date of Birth: 26/08/1930 Strategy: Fast Threshold
 Eye: Left Trials: 286/103=2.8 Flicker: OFF
 Age: 83 Years 10 Months Test Duration: 8 Min 30 Sec Lens: +3.00/-0.50x92



Age Normal Probability
 Fixation Loss: 3/32=9% Good
 False Positives: 0/28=0% Excellent
 False Negatives: 3/14=21% Good
 Fluctuation: Disabled

Age Normal Deviation
 Pattern Defect: 4.33 *
 Overall Defect: -0.65
 HFA MD: -3.06
 HFA PSD: 1.85

Patient HoV Probability
 HoV Slope: 2.8 dB/10°
 HoV 3° Level: 23.5 dB
 Cluster Analysis: Superior Defect

OD(R)

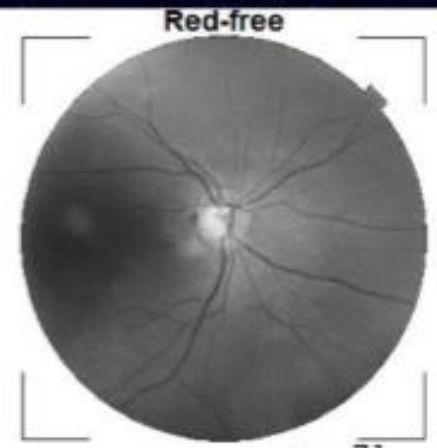
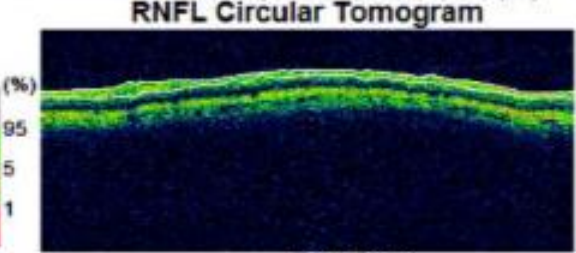
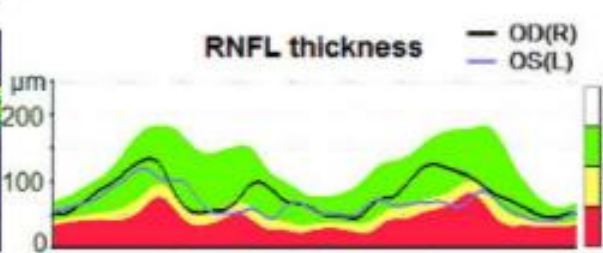
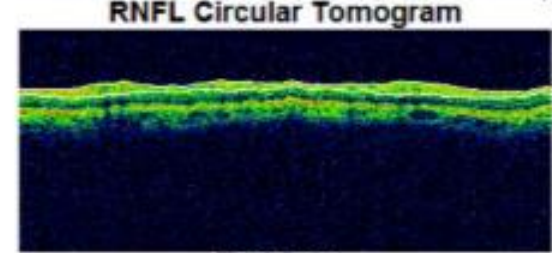
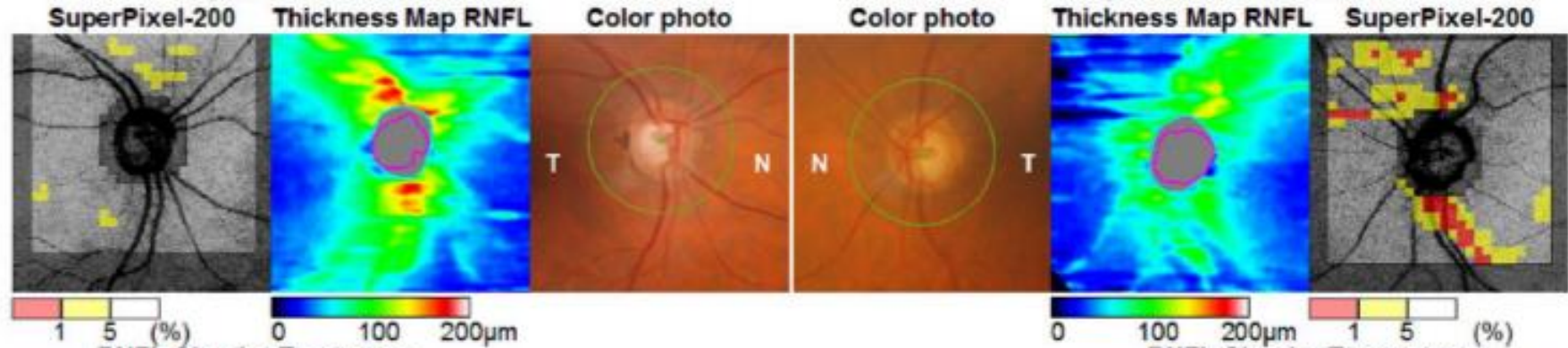
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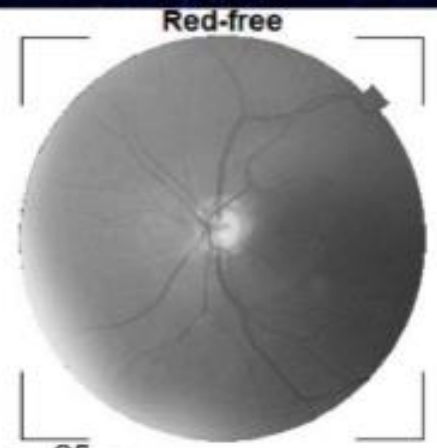
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OS(L)

Capture Date : 26/06/2014

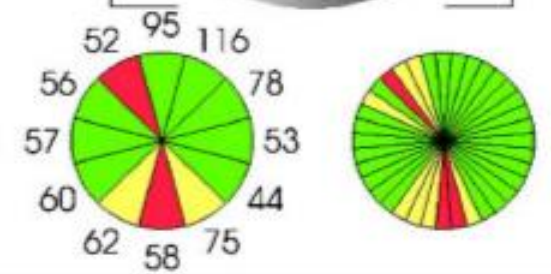
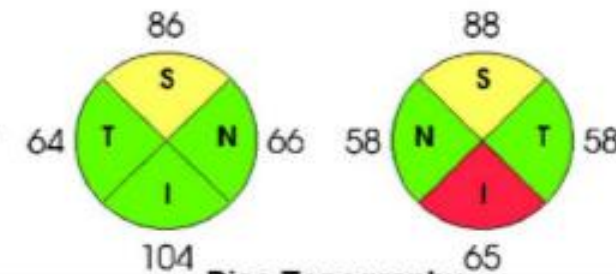
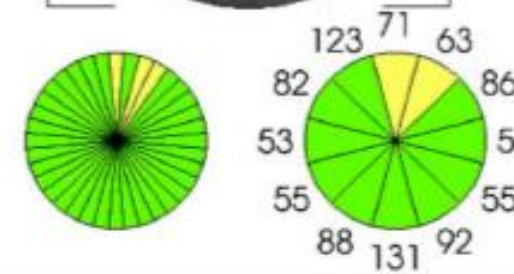


RNFL Symmetry 64%



Average thickness RNFL(µm)

80	Total Thickness	67
86	Superior	88
104	Inferior	65



Refer for left cataract and IOP

- Ophthalmologist feels disc and field signs suggest the left needs lower IOP.
- Has used Xalacom for years
- Changes left to Ganforte and Alphagan
- He states his target for the left is 14mmHg
- NHMRC guidelines state that IOP in established glaucoma needs to be lower than 16-19mmHg

June 2015

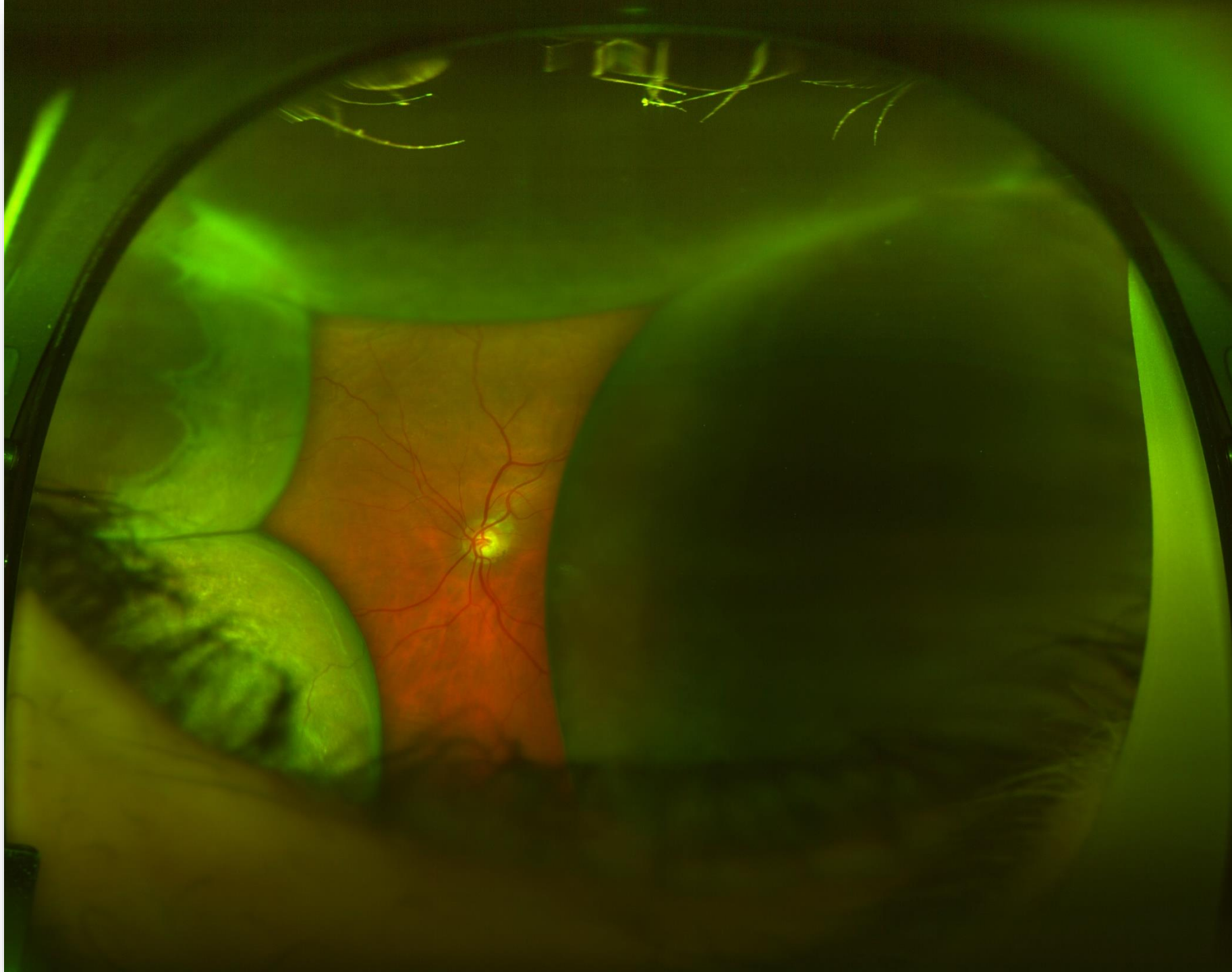
- IOP 20 right and 20 left
- Now on Azarga (Brinzolamide and timolol) and Lumigan PF
- Alphagan was not tolerated
- Booked for left IOL and trabeculectomy

September 2015

- Ophthalmologist review 6 weeks post op
- He reports VA 6/7.5 left
- IOP still 20, which he feels is due to problem at the trab door
- He performed a 5FU needling to remove scar tissue and removed some sutures
- Planed to review her in a month, left on Maxidex 2 hourly

12 days later

- Patient reports poor left vision
- Unaided VA 6/19 right and CF left
- IOP left is 8mmHg
- SL left IOL clear
- Went straight to OCT, suspecting macula pathology – no image!
- OPTOS



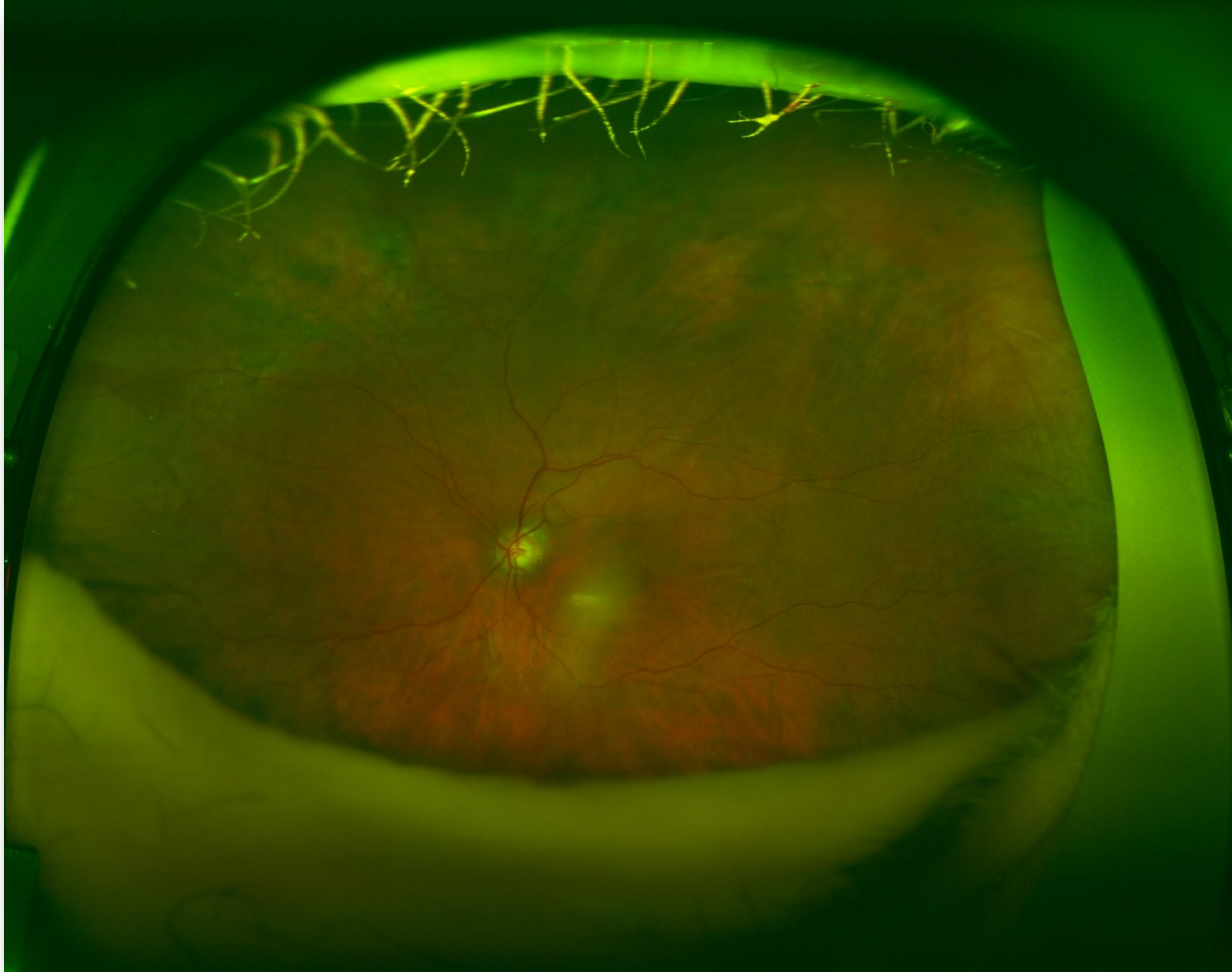
Rang the ophthalmologist

- After viewing the image on his phone the ophthalmologist was confident she was suffering a choroidal effusion
- Cease Maxidex
- Rx Atropine bid and bed rest
- No improvement likely for two weeks

Two weeks later

The ophthalmologist found

- IOP left 6mmHg
- VA CF as temporal lobe is still occluding the visual axis.
- Booked for surgical drainage of the effusion and reinforcement of the trab door



To Trab or not to Trab?

Perioperative Complications of Trabeculectomy in the Collaborative Initial Glaucoma Treatment Study (CIGTS) Am J Ophthalmol 2005; 140(1):16-22.

- 11% of 465 Trabeculectomies procedures resulted in a serous choroidal detachment within one month post op
- Older patients were more likely to experience serous choroidal detachment

Medication in order of appearance

Trade name	Active ingredients
Duotrav	travoprost and timolol
Combigan	brimonidine and timolol
Cosopt	dorzolamide and timolol
Lumigan	bimatoprost
Simbrinza	brinzolamide and brimonidine
Ganforte	bimatoprost and timolol
Xalacom	latanoprost and timolol
Alphagan	brimonidine
Azarga	brinzolamide and timolol

