

GLAUCOMA CASE STUDIES SPECIAL PATIENT UNIT

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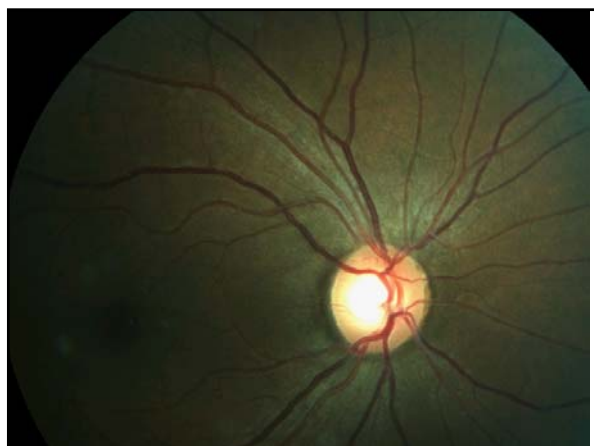
CASE #1

CASE #1

- 39yo HF
- CC: decreased near vision
- Oc Hx: Glaucoma susp x 3 years
- Oc Fam Hx: glaucoma father- told he would have gone blind but passed away
- Med Hx: Hypothyroid, prediabetic, LME 6 mo ago.
- Meds: Levothyroxine

CASE #1

- EOMs/pupils/CF: unremarkable OU
- Refraction
 - OD +0.50 sph Add +0.75 Dva 20/20
 - OS +1.00 -0.50 x 110 Add +0.75 Dva 20/20
- IOPs:
 - 25/24 @ 1:56pm
 - at FU 24/22 @ 11:50am
- SLE: Unremarkable. VH 3 OU
- Gonio: D35r, 2+ TM pigment OU



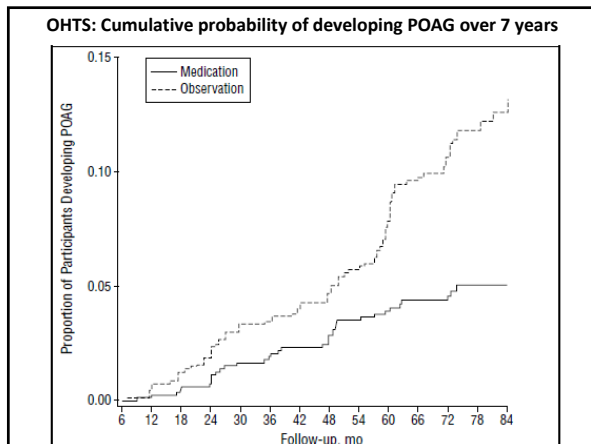
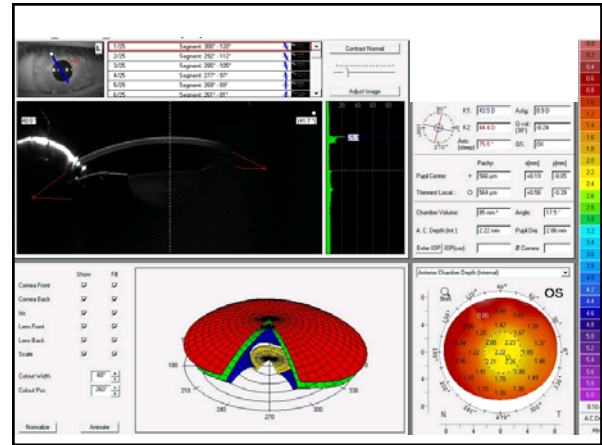
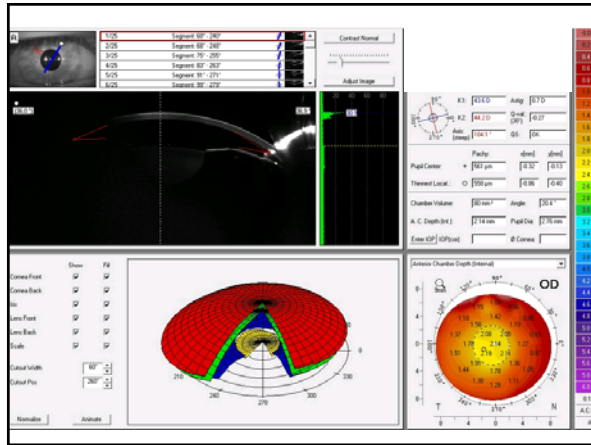
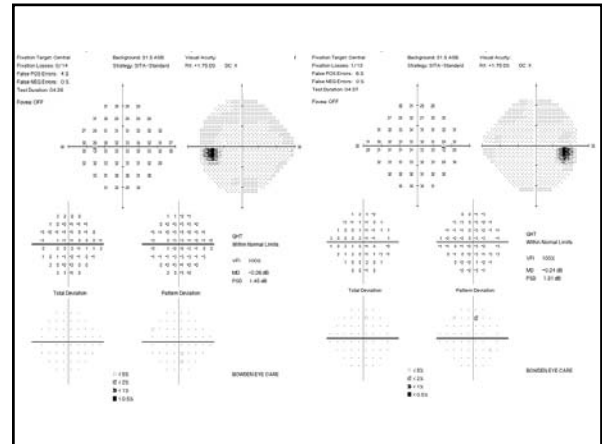
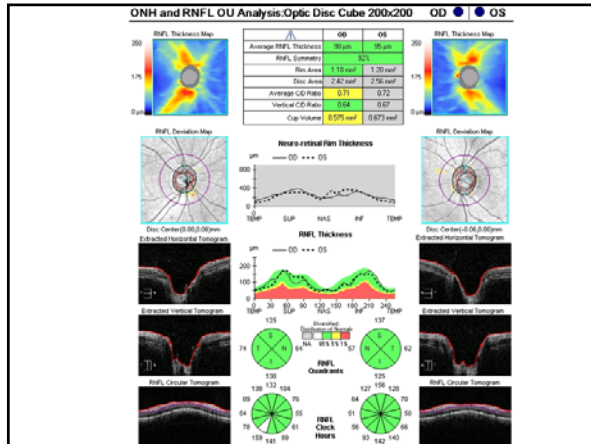


Table. The 10-Year Incidence of Primary Open-angle Glaucoma Among Participants With Treated and Untreated Ocular Hypertension and Their Baseline Central Corneal Thickness and Vertical Cup-Disc Ratio

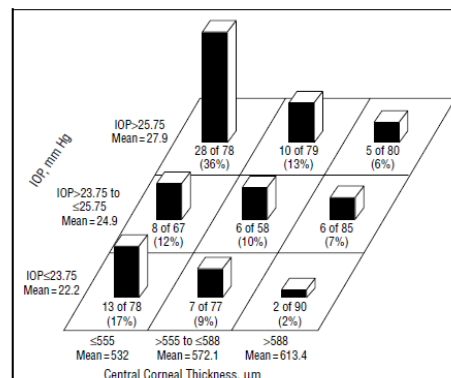
Ethnicity	Untreated for 10 y			Treated for 10 y		
	POAG, % (95% CI)	CCT, Mean (SD), µm	VCDR, Mean (SD)	POAG, % (95% CI)	CCT, Mean (SD), µm	VCDR, Mean (SD)
Lowest risk^a						
All	7 (4-11)	608 (27)	0.27 (0.17)	4 (2-5)	607 (29)	0.30 (0.18)
Not African American	7 (4-11)	609 (27)	0.27 (0.17)	3 (2-5)	607 (30)	0.28 (0.18)
African American	8 (5-12)	599 (30)	0.31 (0.17)	5 (3-8)	606 (23)	0.40 (0.16)
Moderate risk^b						
All	18 (13-26)	573 (23)	0.39 (0.19)	8 (6-10)	574 (21)	0.41 (0.18)
Not African American	18 (13-26)	575 (22)	0.39 (0.19)	8 (6-10)	575 (21)	0.40 (0.19)
African American	19 (13-29)	563 (25)	0.40 (0.18)	9 (6-12)	572 (23)	0.44 (0.18)
High risk^c						
All	42 (32-54)	541 (26)	0.49 (0.16)	19 (15-23)	534 (27)	0.46 (0.19)
Not African American	40 (31-52)	546 (25)	0.48 (0.16)	18 (14-22)	538 (23)	0.43 (0.19)
African American	45 (38-59)	535 (27)	0.51 (0.15)	21 (16-26)	528 (31)	0.50 (0.16)

The Rule of 5's

- Relation between ocular parameters and progression to POAG in OHTS

	High Risk	Mod Risk	Low Risk
IOP	>25.75	>23.75 to ≤25.75	≤23.75
CCT	≤555	>555 to ≤588	>588
Vertical C/D	≥0.5	>0.3 to <0.5	≤0.3

% developing POAG grouped by CCT and IOP



Editorial

Is Corneal Thickness an Independent Risk Factor for Glaucoma?

Felipe A. Medeiros, MD, PhD - La Jolla, California
Robert N. Weinreb, MD - La Jolla, California

The Ocular Hypertension Treatment Study (OHTS) showed that central corneal thickness (CCT) was a significant predictor of glaucoma development. However, CCT remains a statistically significant risk factor for glaucoma only when analyzed in isolation. When analyzed in conjunction with IOP, CCT is no longer a significant risk factor. The conclusion that CCT is a true independent risk factor for glaucoma is not validated at this time and requires further investigations.

The sole effect of thin corneas may be to mask the true extent of IOP elevation, thereby delaying the recognition of the presence of disease.

Ophthalmology. 2012;119:435-6

Table 6. A Point System for Estimating an Ocular Hypertensive Patient's 5-Year Risk of Developing Primary Open-Angle Glaucoma (POAG)

Baseline Predictor	0	1	2	3	4
Age (yr)	<45	45 to <55	55 to <65	65 to <75	≥75
Mean IOP (mmHg)*	<22	22 to <24	24 to <26	26 to <28	≥28
Mean CCT (μm)*	≤550	550 to <600	600 to <650	650 to <700	≥700
Mean vertical cup-to-disc ratio by contour*	<0.3	0.3 to <0.4	0.4 to <0.5	0.5 to <0.6	≥0.6
Mean PSD (dB)*	<1.8	1.8 to <2.0	2.0 to <2.4	2.4 to <2.8	≥2.8
Sum of points	0-6	7-8	9-10	11-12	≥13
Estimated 5-yr risk of POAG	≤4.0%	10%	15%	20%	≥33%

CCT = central corneal thickness; dB = decibels; IOP = intraocular pressure; PSD = pattern standard deviation.
*Eye-specific variables are the mean of right and left eyes.

0+1+2+4+0 = 7pts or 10% risk over 5 years

Ocular Hypertension

- Risk Calculators

- **Quantitative 5yr risk** assessment using OHTS data
- Online, iPhone app, and PDF formats
- Google “glaucoma risk calculator”

Glaucoma Calc

Age: 0.2, 0.3
IOP: 0.3, 0.4
C/D Ratio: 0.4, 0.5
CCT: 0.5, 0.6
PD: 0.6, 0.7

Vertical Cup/Disc Ratio
Average of one measurement on both eyes

Glaucoma Risk in 5 Years: 22%

Risk Assessment: High

Treatment recommended

KEY POINTS

- The risk of OHT progressing to glaucoma varies from patient to patient
- The risk of progression can be calculated using risk calculators
- The risks and benefits of prophylactic treatment OHT should be weighed for each patient



GLAUCOMA CASE STUDIES

CASE CLOSED

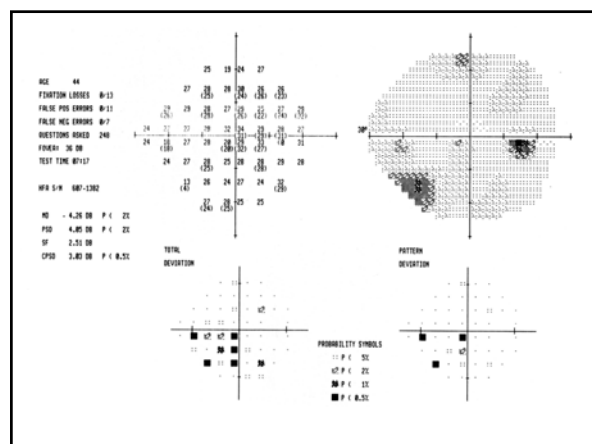
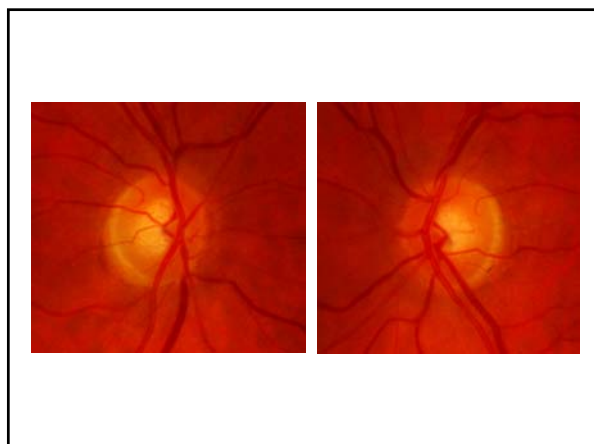
CASE #2

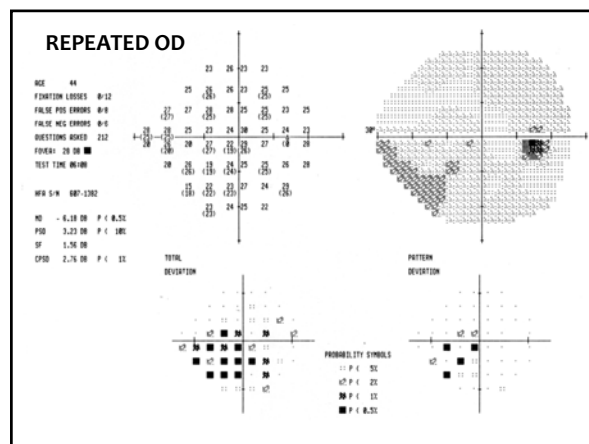
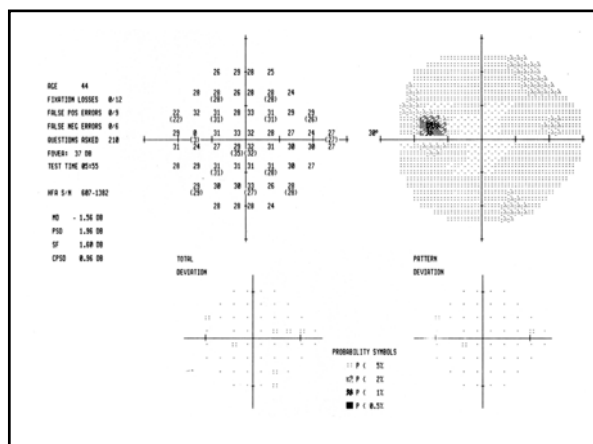
CASE #2

- 44yo WM
- CC: Routine exam.
- Oc Hx: Unremarkable. LEE 7-8 years ago.
- Med Hx: Migraines, smoker
- Meds: None

CASE #2

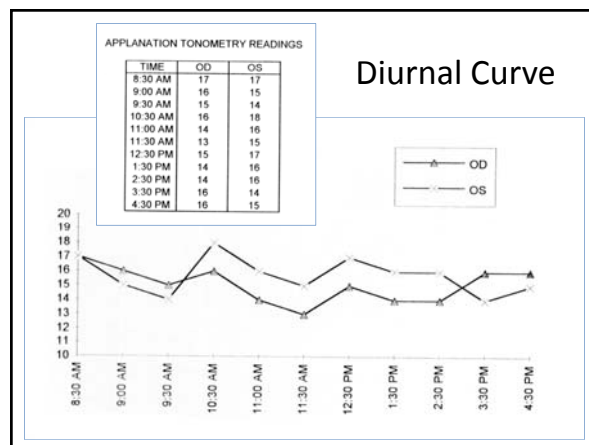
- EOMs/pupils: unremarkable OU
- CF: Constriction inferior nasal OD
- Refraction
 - OD -4.00 -0.75 x 060 Dva 20/25
 - OS -4.75 Sph Dva 20/20
- IOPs:
 - 20/20 @ 3:00pm
 - FU 18/15 @ 6:30pm
- SLE: Unremarkable. VH 4 OU
- Gonio: D40r, 1+ TM pigment OU





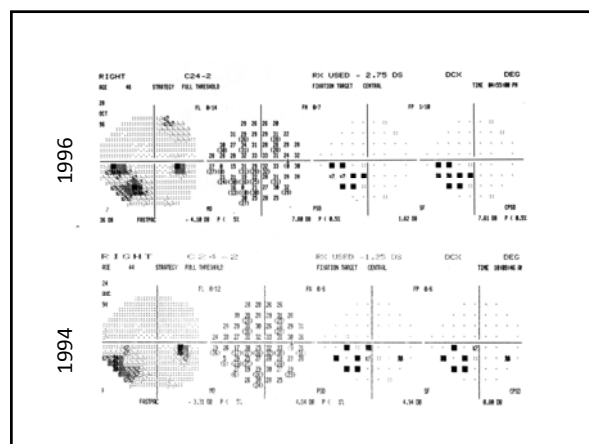
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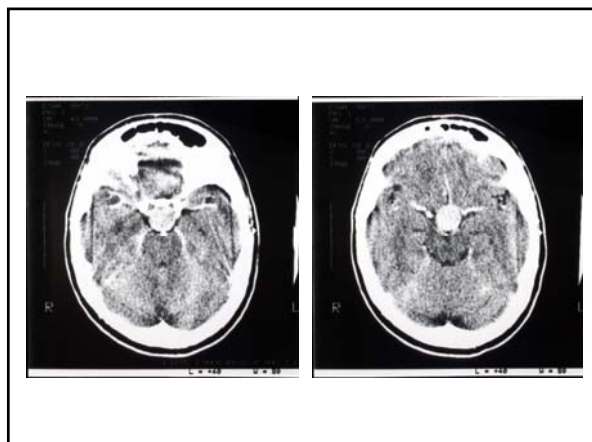
- Ophthalmology consult
 - Hx: No head/eye trauma, (+) migraine HA
 - IOPs: 19/19 @ 3:30pm
 - Gonio: normal OU
 - Pupils normal, Color: normal
 - DFE: normal OU, no pallor
- IMP: Abnormal VF with normal IOP and ONH
- PLAN: Get diurnal curve



CASE #2

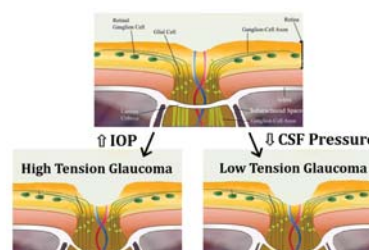
- Lost to FU for 2 years
- Returns with CC of blurry vision
- Pupils: PERRL, Trace APD OD
- Refraction
 - OD -5.25-1.00x075 Dva 20/30
 - OS -5.25-0.50x105 Dva 20/20
- IOPs: 18/18 @ 3:30pm





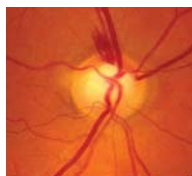
Normal Tension Glaucoma

- All the features of POAG with IOP < 21 mmHg
- Vascular factors (eg. perfusion pressure, CSF pressure) may play a larger role in NTG



Normal Tension Glaucoma

- Treatment is still reduction of IOP
 - Recommend delay tx and monitor closely until progression documented
- Risk factors for NTG progression
 - Female
 - Migraine
 - Disc hemorrhage



Natural History of Normal-Tension Glaucoma

Collaborative Normal-Tension Glaucoma Study Group

“Some cases of NTG progress more rapidly than others. Although approximately half of cases showed a confirmed localized visual field deterioration by 7 years, the change is typically small and slow, often insufficient to measurably affect the MD index.”

Main Outcome Measures: Visual field data were used in this report only from the interval during which the

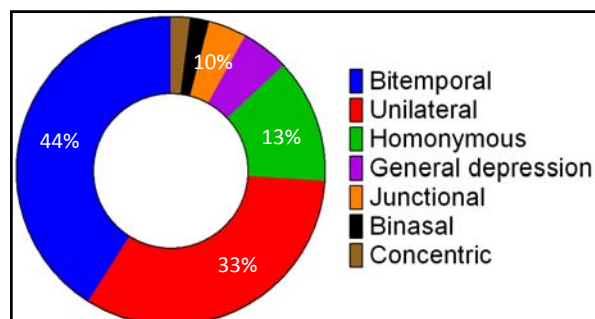
Anderson DR, Drance SM, Schulzer M. Natural history of normal-tension glaucoma. Ophthalmology. 2001;108(2):247-53.

When should I order an MRI?

Findings that increase the likelihood of uncovering an intracranial mass lesion

- Age <50yrs
 - NTG is rare in young people
- VA worse than 20/40
 - Beware unexplained reduction in BVA
- Vertically aligned visual field defects
 - Glaucomatous defects do not respect the vertical
- Optic disc pallor

Greenfield, Ophthalmology. 1998;105:1866



Visual field defects in 103 consecutive patients presenting to neurosurgery with pituitary adenoma

Clin Neurosci 2014;21:735-740

KEY POINTS

- Normal tension glaucoma is a diagnosis of exclusion
- Glaucoma isn't the only condition that causes enlargement of the optic cup
- Chiasmal lesions can produce strange and mystifying VF defects
- Know the indications for neuroimaging of NTG suspects



GLAUCOMA CASE STUDIES

CASE CLOSED



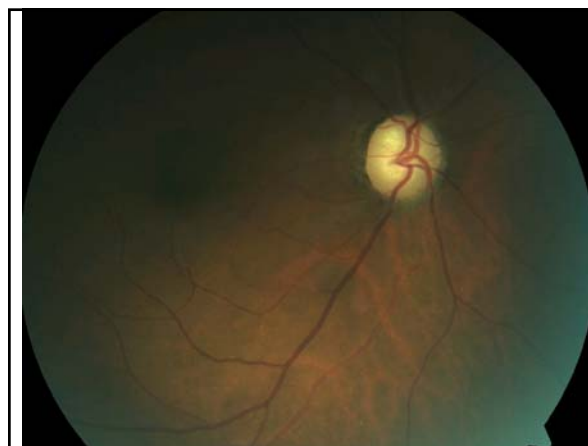
CASE #3

CASE #3

- 69yo HF
- CC: Referred by outside OD for uncontrolled gl
- Oc Hx: Glaucoma x 1.5 years
- Oc Fam Hx: Cataracts
- Med Hx: Type 2 DM x 1995, HTN x 1985, chol, previous smoker
- Meds: Azopt 1gtt bid OU, Lumigan 1gtt qhs OU, Combigan 1gtt bid OU

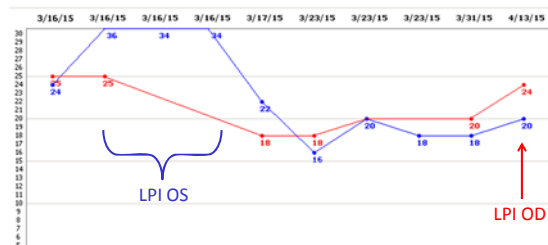
CASE #3

- Pupils: Round and reactive OU, 3+ APD OS
- CF: Generalized constriction OU
- Refraction
 - OD +1.25 -2.25 x 100 Dva 20/25
 - OS +0.25 -1.50 x 085 Dva 20/60
- IOPs:
 - 20/20@ 10:42am
- SLE: 2+ NS. VH 1 OU
- Gonio: (A)B10b, 2+ TM pigment with pigment ant to SL OU



Intraocular Pressure Profile

Lumigan HS OU, Combigan BID OU, Azopt BID OU

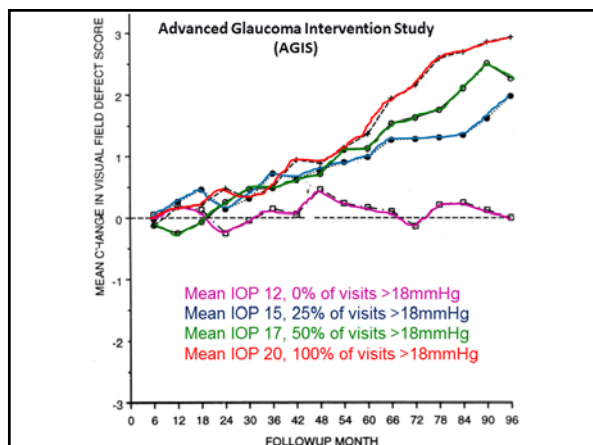
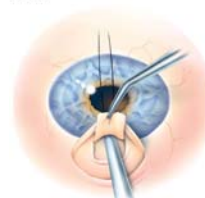


The patient was lost to follow-up after undergoing LPI OD

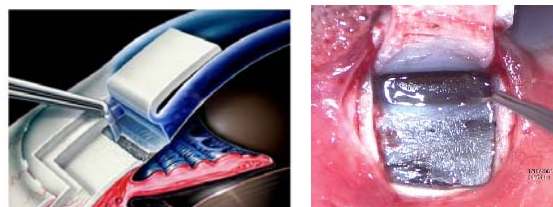
When to Hold and When to Fold

Indications for glaucoma specialist referral

- Failure to achieve target pressure
- Failure to control progression
- Inability to accurately assess VF, ONH, or IOP
- Surgical intervention indicated (eg. fixation threatened)



Non-penetrating Deep Sclerectomy



- Following NPDS, a sustained IOP decrease of 10 mm Hg (45%) was attained, with stable acuity, increased perimetric generalized light sensitivity and 90% reduction in medical therapy requirement.

Sponsel WE, Groth SL. Mitomycin-augmented non-penetrating deep sclerectomy: preoperative gonioscopy and postoperative perimetric, tonometric and medication trends. Br J Ophthalmol. 2013 Mar;97(3):357-61.

KEY POINTS

- Perform 10-2 visual fields in patients with severe glaucoma
- Surgical intervention has the potential to provide stable IOP control with less dependence on topical therapy
- Co-manage difficult and advanced disease cases with a glaucoma specialist



GLAUCOMA CASE STUDIES

CASE CLOSED

CASE #4

CASE #4

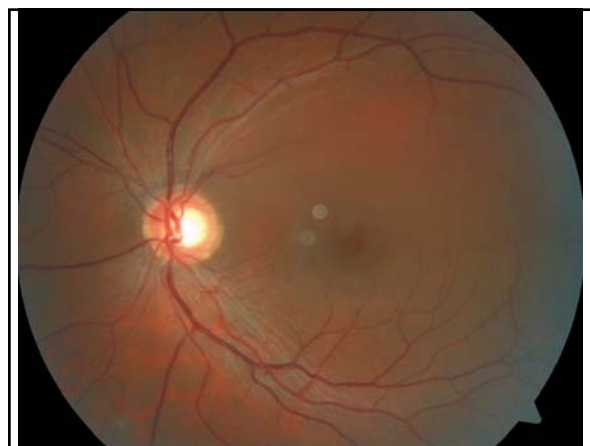
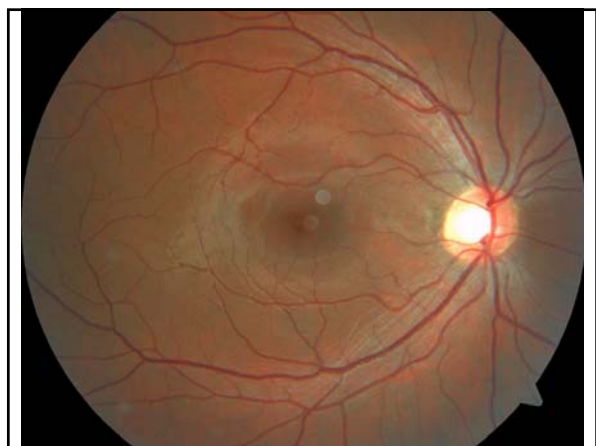
- 29yo Hm
- CC: Referred for gl eval
- Oc Hx: Glaucoma OS x 4yrs, taken off meds 1-2 years ago. Blunt trauma with orbital floor fracture OS 2012. LEE 1 year ago.
- Oc Fam Hx: Possible glaucoma?, pt uncertain
- Med Hx: HTN x 2 years. LME unknown.
- Meds: Hydralazine, Lisinopril

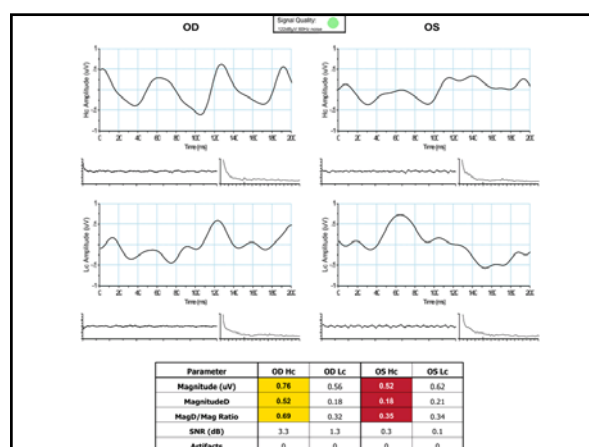
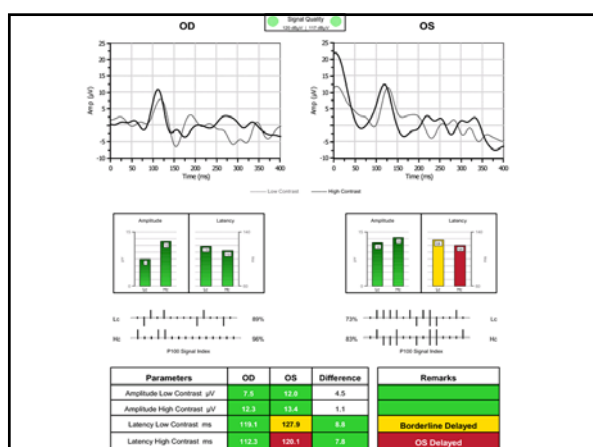
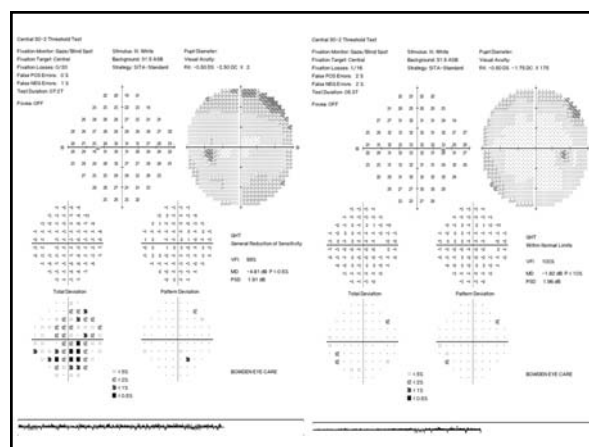
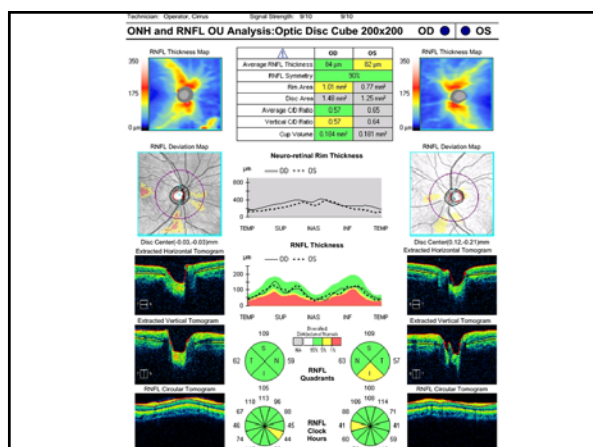
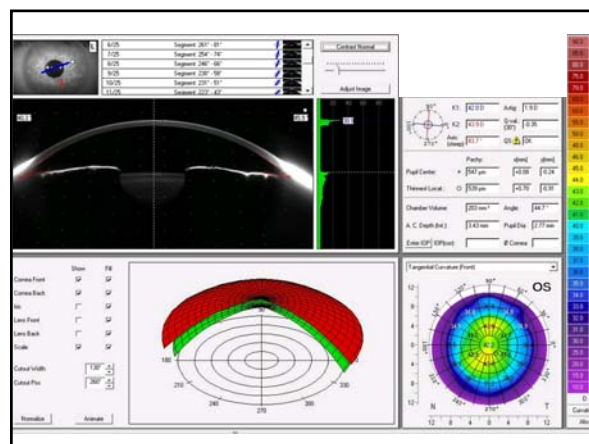
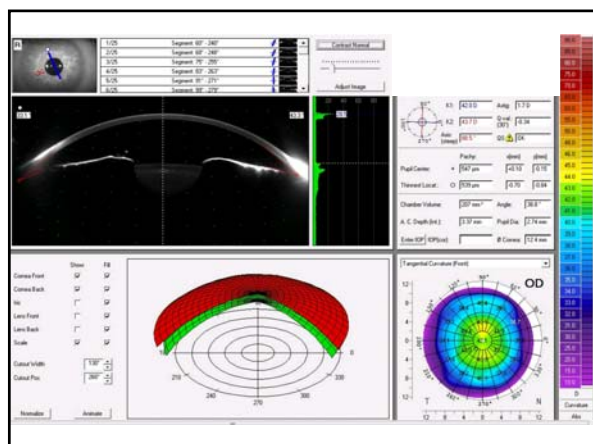
CASE #4

- Pupils/EOMs/CF: Unremarkable OU
- Refraction
 - OD -3.75-1.25x175 Dva 20/15-2
 - OS -3.75-2.50x002 Dva 20/20-2
- IOPs:
 - 23/30 @ 9:58am
 - FU 14/24 @ 2:07pm
- SLE:
 - OD Unremarkable, VH 4
 - OS 1+ PSC OS, VH 4

CASE #4

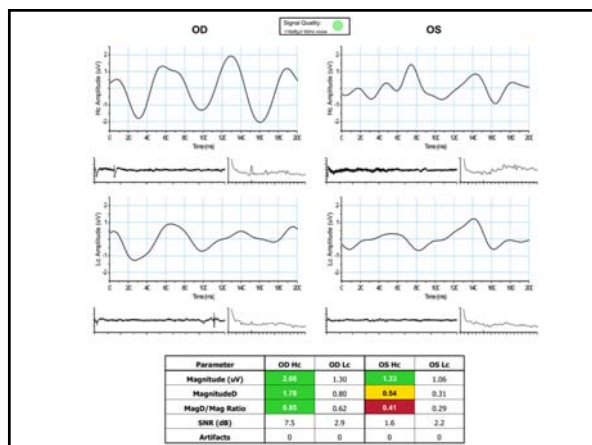
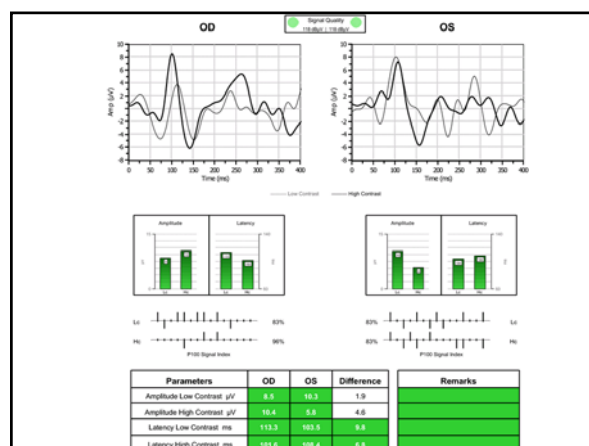
- Gonio:
 - OD D40r, 1+ TM pigment. Iris processes
 - OS E45r, inf and nasal angle recession with broken iris processes. D40r superior and temporal





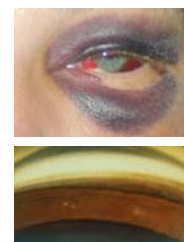
Started on Lumigan 1gtt qhs OS, FU 1 week later

- IOPs 19/19 @ 2:08pm



Angle Recession Glaucoma

- Only a small percentage (~6%) of patients with angle recession go on to develop glaucoma
 - Glaucoma can develop at any time following trauma
 - Increased risk if $>180^\circ$ of recession
- Half of individuals with angle recession glaucoma develop POAG in the fellow eye
 - Recession may accelerate the glaucomatous disease process in an eye already at risk

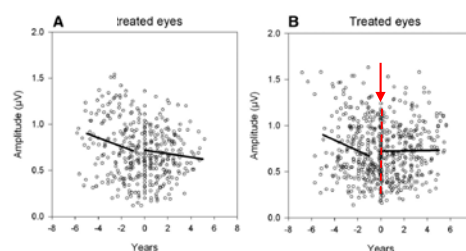


Angle Recession Glaucoma

- Diagnosis
 - Extra wide ciliary body band
 - Torn iris processes
- Treatment
 - Avoid pilocarpine in all cases
 - Avoid prostaglandins in acute cases
 - Limited efficacy with SLT/ALT

pERG Evaluation of Treatment Efficacy

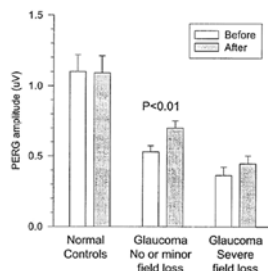
pERG Amplitudes of Untreated and Treated Glaucoma Suspect Eyes Before and After IOP Reduction



Ventura LM, et al. Progressive loss of RGC function is hindered with IOP-lowering treatment in early glaucoma. Invest Ophthalmol Vis Sci. 2012 Feb 13;53(2):659-63.

pERG Evaluation of Treatment Efficacy

pERG Amplitudes Before and After IOP Reduction in Normal, Mild Glaucoma, and Severe Glaucoma Eyes



Ventura LM, et al. Restoration of RGC function in early glaucoma after intraocular pressure reduction: a pilot study. Ophthalmology. 2005 Jan;112(1):20-7.

KEY POINTS

- Perform gonioscopy on all patients with a history of blunt trauma
- Watch the fellow eye of angle recession glaucoma patients closely for POAG development
- ERG testing can be a useful tool to assess treatment efficacy



GLAUCOMA CASE STUDIES

CASE CLOSED

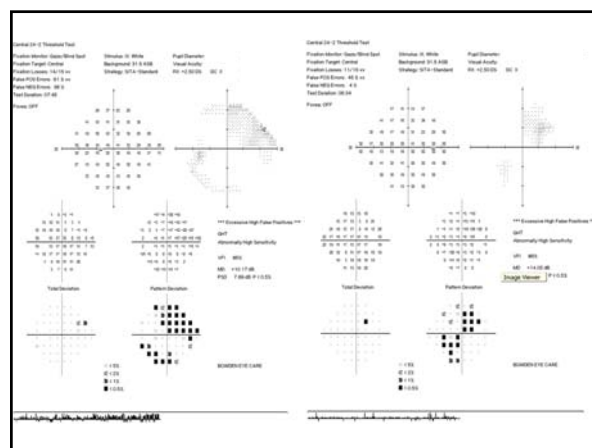
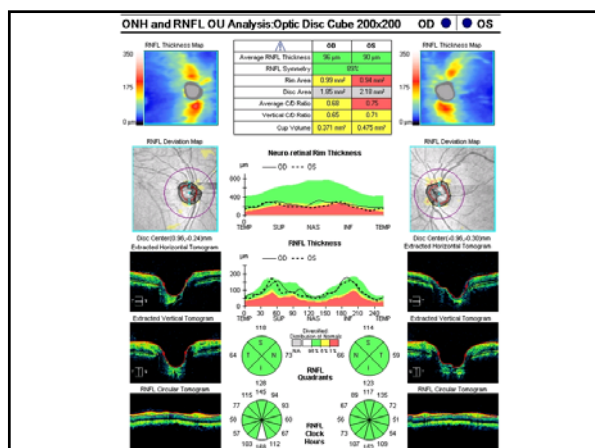
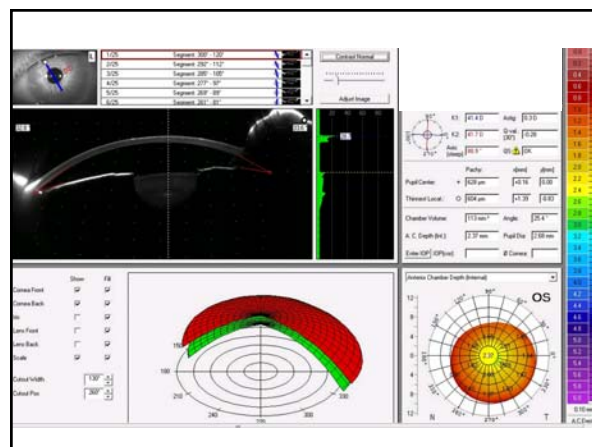
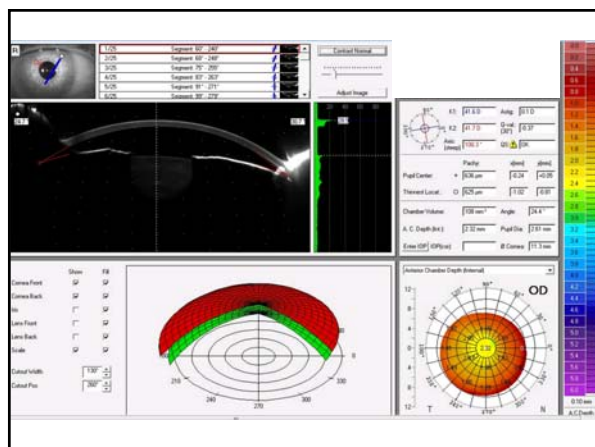
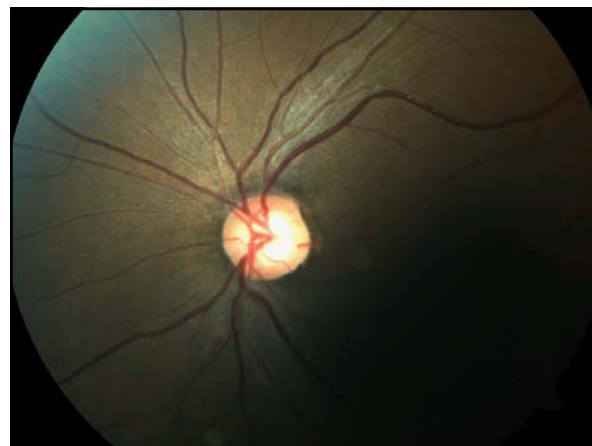
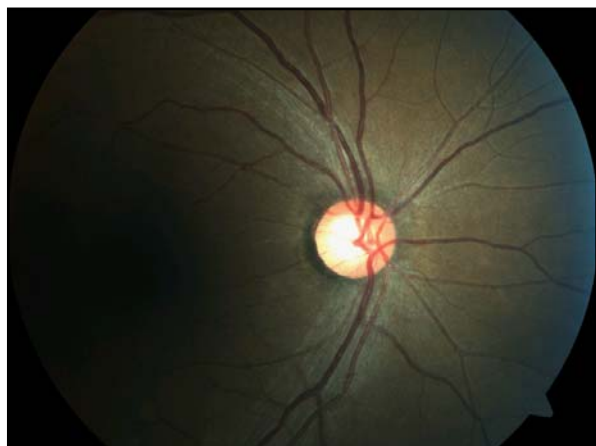
CASE #5

CASE #5

- 47yo HF
- CC: Referred for gl WU due to large C/Ds
- Oc Hx: Glaucoma suspect x 1mo
- Oc Fam Hx: None
- Med Hx: No known illness, trauma, or procedures. LME 6 mo ago.
- Meds: None

CASE #5

- Pupils/EOMs/CF: Unremarkable OU
- Refraction
 - OD +0.50 sph Add +1.50 Dva 20/20-1
 - OS Pl Add +1.50 Dva 20/20-1
- IOPs:
 - 16/16 @ 4:53pm
 - FU 20/18 @ 4:50pm
- SLE: Unremarkable. VH 4 OU
- Gonio: D4or, 1+ TM pigment



GLAUCOMA CASE STUDIES

CASE CLOSED

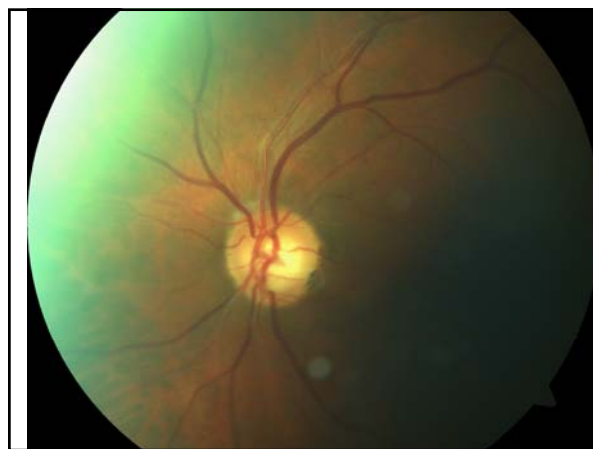
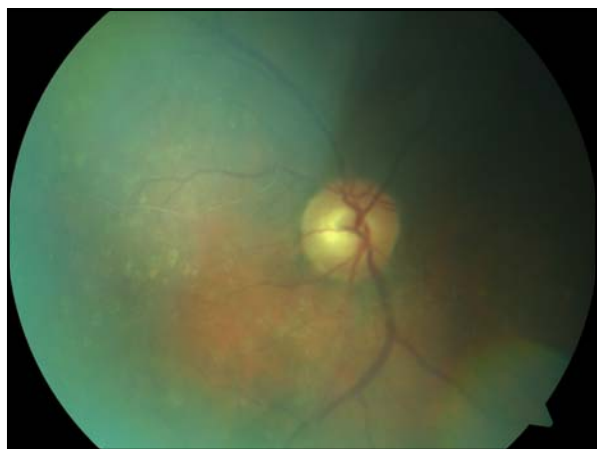
CASE #6

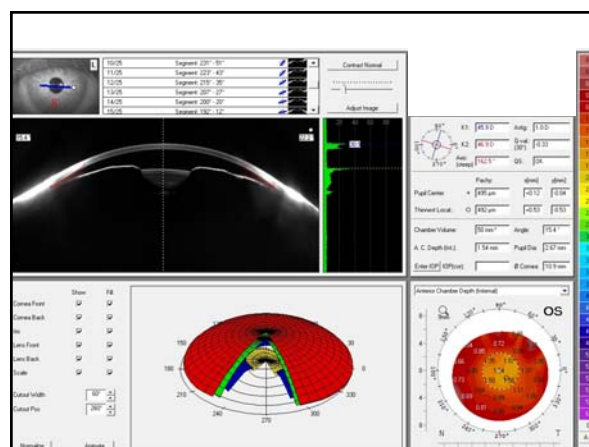
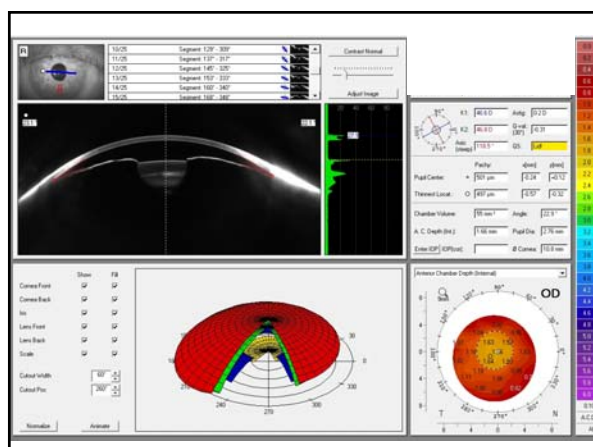
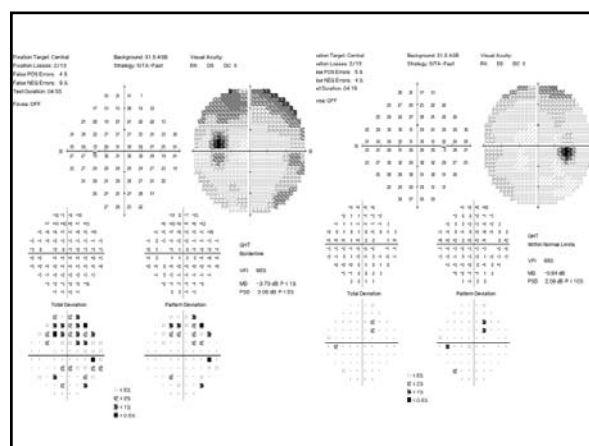
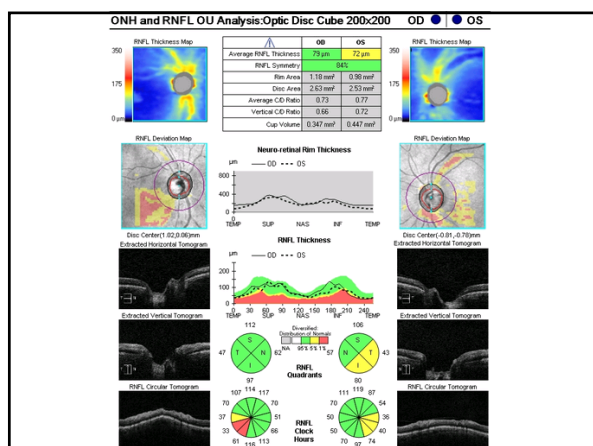
CASE #6

- 81yo HM
- CC: DM eval, blurred vision since breaking glasses
- Oc Hx: Unremarkable, LEE 2 years ago
- Oc Fam Hx: Unremarkable
- Med Hx: HTN & DM type 2 x 7 years, chol, LME unknown
- Meds: Metformin, simvastatin, Ramipril, Metoprolol, Furosemide

CASE #6

- EOMs/pupils/CF: unremarkable OU
- Refraction
 - OD +1.00 Sph Add +2.25 Dva 20/20
 - OS +1.75 -2.25 x 095 Add +2.25 Dva 20/20 -1
- IOPs:
 - 17/26 @ 2:09pm
- SLE: 1+ NS & 1+ CS OU. VH 1 OU
- Gonio: (A)B1ob, 3+ TM pigment OU



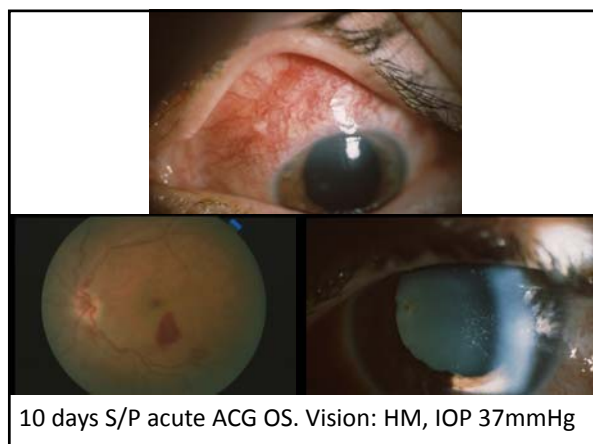


CASE #6

- Ocular disease clinic consultation:
 - Narrow, potentially occludable angles on gonioscopy.
 - Pt advised to return in 1 week for LPI consultation.

CASE #6

- 1 week follow-up visit:
 - Red painful left eye x 3d.
 - Vision: 20/20 OD, HM OS
 - Pupil: R&R OD, Fixed and mid-dilated OS
 - Ext: W&Q OD, 3+ inj with cloudy cornea OS
 - IOP: 13 OD, 56 OS
 - DX: ACG OS
 - TX: LPI OU, Diamox PO, topical meds



Angle Closure Glaucoma

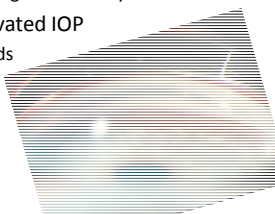
- Clinical presentation
 - **Chronic:** No symptoms
 - **Subacute:** Mild intermittent symptoms
 - Periorbital headache
 - Transient blur & redness
 - Colored halos
 - **Acute:** Severe constant symptoms
 - Pain, redness, vision loss



Angle Closure Glaucoma

• Stages of Angle Closure

- PACS – **STAGE 1:** Anatomically Narrow Angle
- Normal but cannot see TM in 1 quad w/o indentation
 - 10-25% will progress to stage 2 within 5 yrs
- PAC – **STAGE 2:** PAS and/or Elevated IOP
- Cannot see TM in ≥2 quads
 - Normal OCT and VF
- PACG – **STAGE 3:** Angle-closure glaucoma
- OCT and/or VF changes



Angle Closure Glaucoma

- Diagnosis
 - Symptoms (periorbital headache)
 - Gonioscopy
 - Potentially occludable angles (iris movement with indentation)
 - Evidence of prior closure (PAS, pigmentation)
 - ACA Imaging
 - OCT, Pentacam, Ultrasound
 - Glaucomatous optic neuropathy
 - Cupping on ophthalmoscopy
 - RNFL loss on OCT
 - VF defects (SAP or FDT)



Angle Closure Glaucoma

Treatment Options

<u>Mechanism</u>		<u>Treatment</u>
Pupil Block	➡	Iridotomy
Lens (Phacomorphic)	➡	Lens extraction
Iris (Plateau iris)	➡	Iridoplasty
Synechial closure	➡	Tube Shunt

KEY POINTS

- All ACG suspects should be managed with a sense of urgency because it can suddenly become acute
- Educate thoroughly on the S & S of acute angle closure and to RTC immediately if experienced
- Gonioscopy is invaluable in the diagnosis and management of ACG



GLAUCOMA CASE STUDIES CASE CLOSED

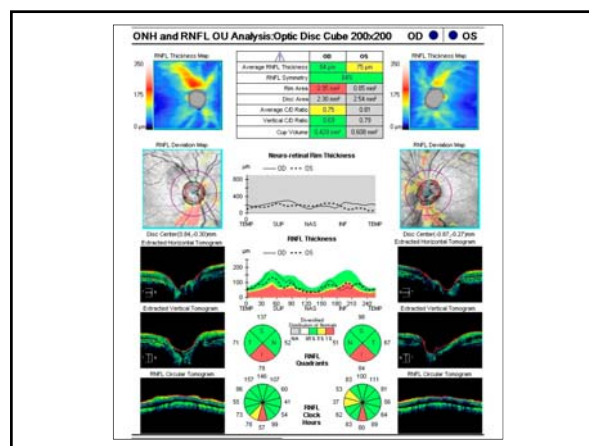
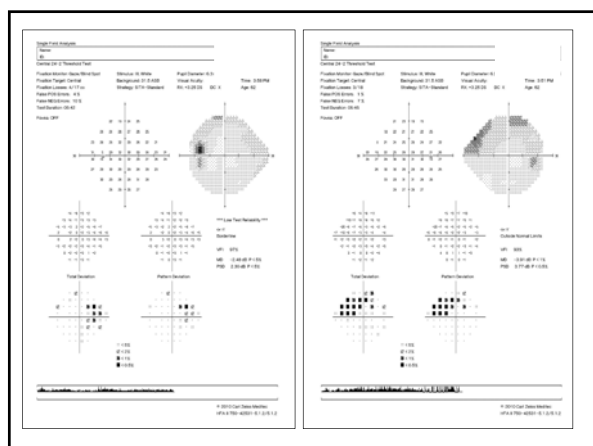
CASE #7

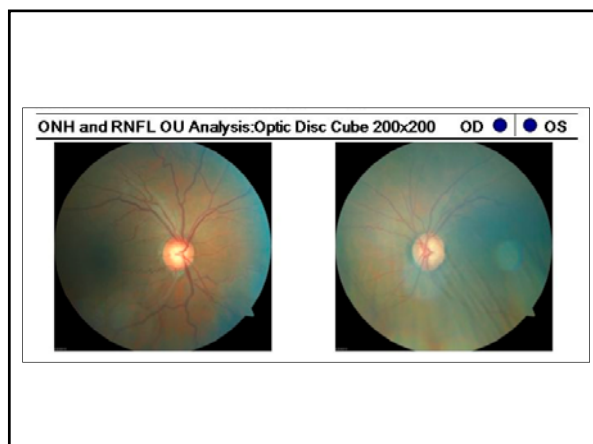
CASE #7

- 62yo BM
- CC: Lost eyeglasses
- Oc Hx: Unremarkable. LEE 2 years ago
- Med Hx: Multiple myeloma (advanced), COPD, kidney failure
- Meds: High dose systemic steroids for myeloma

CASE #7

- EOMs/pupils/CF: unremarkable OU
- Refraction
 - OD +2.50 -1.25 x 055 Add +2.50 Dva 20/20 -2
 - OS +2.75 -1.50 x 091 Add +2.50 Dva 20/20 -2
- IOPs:
 - 32/31@ 4:16pm
- SLE: Tr CS OU. VH 4 OU
- Gonio: D35r, 1+ TM pigment OU



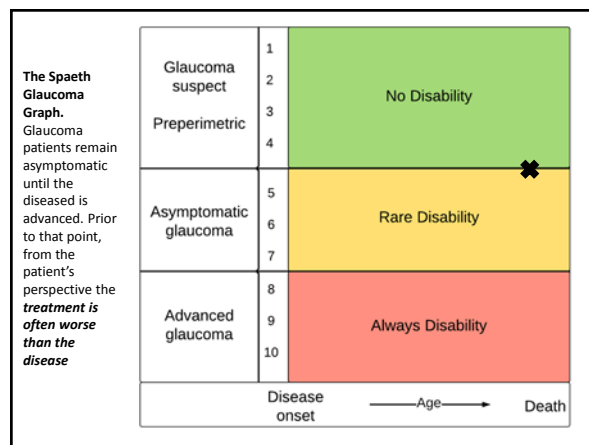


CASE #7

- Impression: Mild POAG OU
 - Possible steroid-induced component
- Initial treatment with PGA failed to lower IOP to the desired target (<20 mmHg)
 - PGA IOP: 22-24 OU
- Beta-blockers: Contraindicated due to COPD

CASE #7

- PGA + Brimonidine: IOP 18-20
 - Allergic reaction after 6 months of use.
- PGA + Dorzolamide: IOP 20-24
 - Unpleasant metallic taste following instillation
- The patient expired less than 2 years after being diagnosed with glaucoma due to complications of myeloma



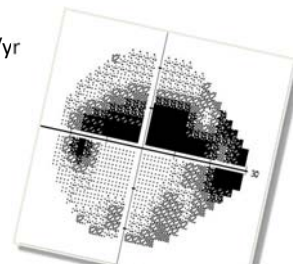
Managing Glaucoma Progression

- Appropriate aggressiveness of glaucoma therapy is dictated by:
 - Severity of vision loss
 - Rate of progression
 - Life expectancy
- Severity
 - More severe glaucoma generally requires more aggressive therapy



Managing Glaucoma Progression

- Rate of disease progression
 - Varies widely among patients
 - Untreated POAG typically 0.2 – 2.0 db/yr
 - Importance of detecting rapid progressors early
 - Perform VF q6mos for first 2 years



Managing Glaucoma Progression



Managing Glaucoma Progression

- Severity of Vision Loss
- Rate of Progression
- Life Expectancy
 - A well-defined science
 - Widely used in financial services
 - Online life expectancy calculators



Wharton: <http://bit.ly/lifex10>
 Social security: <http://bit.ly/lifex11>
 Bankrate: <http://bit.ly/lifex12>

KEY POINTS

- Consider disease severity, rate of progression, and life expectancy when determining aggressiveness of glaucoma therapy
- Glaucoma therapy is almost always prophylactic
- Only treat glaucoma if you are confident that the patient's quality of life would eventually be worse without it



GLAUCOMA CASE STUDIES

CASE CLOSED

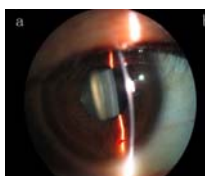
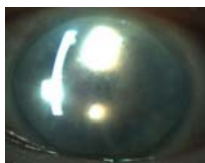
CASE #8

CASE #8

- 28yo IF
- CC: Foggy vision OS x 2 months
- Oc Hx: VKC OU. Previous chronic topical steroid use.
- Oc Fam Hx: Unremarkable
- Med Hx: Seasonal allergies
- Meds: None

Posner-Schlossman Syndrome

- Symptoms
 - Mild discomfort or blurring of vision
 - Halos around lights
 - History of previous episodes
- Signs
 - Severe IOP elevation (40-60 mmHg)
 - Mild AC rxn
 - Rare cells
 - Few KPs
 - Corneal edema
 - Open angles with minimal inflammatory sequelae



Posner-Schlossman Syndrome

- Treatment
 - Acute
 - AC paracentesis/Diamox/Mannitol
 - Topical meds but avoiding prostaglandins
 - Short course of steroids
 - Chronic
 - Topical meds but avoiding prostaglandins
 - At home Diamox reserve to use PRN
 - Antivirals may reduce frequency of outbreaks

KEY POINTS

- Be sure to rule out Posner-Schlossman imposters such as acute angle closure glaucoma/pigment dispersion syndrome
- Monocular patients need polycarb FTW specs
- Be sure to ask about contraindications prior to administering Diamox PO



GLAUCOMA CASE STUDIES

CASE CLOSED



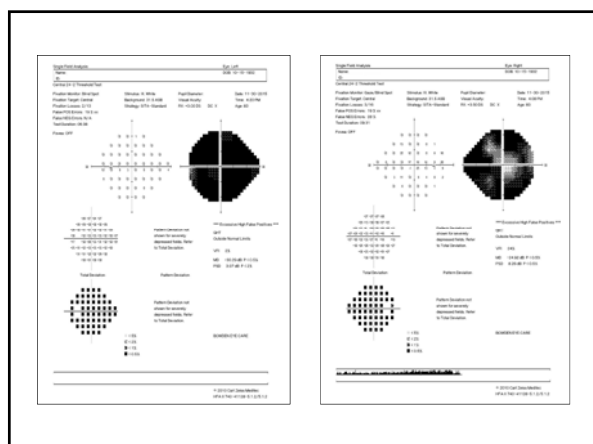
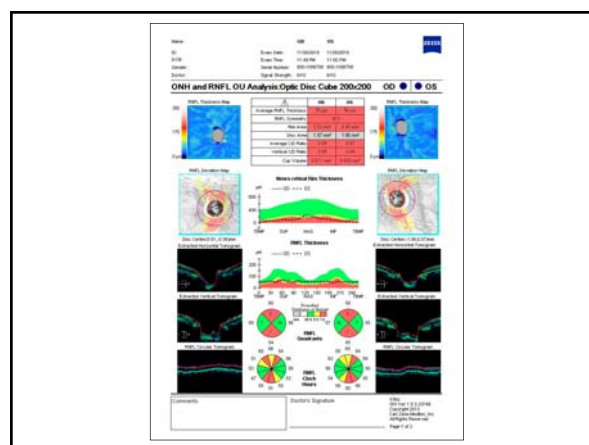
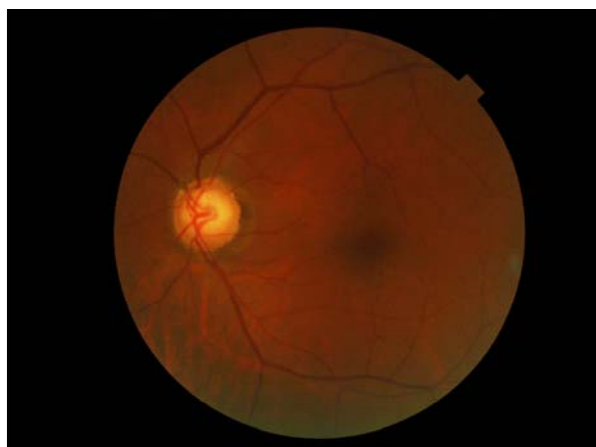
CASE #9

CASE #9

- 83yo BM
- CC: Long-standing h/o severe POAG OU
- Oc Hx: S/P cataract sx OU, Mild NPDR OU
- Oc Fam Hx: Unremarkable
- Med Hx: NIDDM x ~20yrs, HTN, Dyslipidemia
- Meds: Metformin, lisinopril, HCTZ, metoprolol, simvastatin,

CASE #9

- Pupils: Equal and round OU, -APD
- CF: Generalized constriction OU
- Refraction
 - OD +0.25 sph Dva 20/30- PHNI
 - OS +0.25 sph Dva 20/25-
- IOPs: 26/25 @10:47am
- SLE: White & quiet OU, VH 4 OU.
- Gonio: D4or, 2+ TM pigmentation OU



CASE #9

- Pt not cooperative with attempts at obtaining consultation with glaucoma specialist
 - Refuses any surgical interventions
- Communication with family members
 - Pt is widower
 - Grown daughter looks after patient, and brings him to appointments
 - She states that he is too stubborn to listen to her advice

CASE #9

- Adjustments to medication regimen to improve IOP control and compliance
 - PGA
 - Cosopt (Timolol + Dorzolamide)
 - Brimonidine
 - Diamox Sequels (500 mg PO q12hr)
- Patient would never admit to non-compliance and would become hostile at the suggestion he was not using his medication

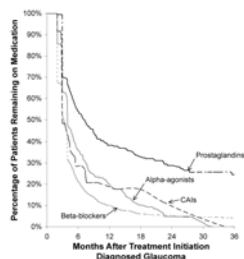
CASE #9

- Patient counseling
 - IOP numbers
 - VF review
 - Blindness imminent
 - Tips to remember drops (eg. alarms)
- Pt was followed closely for about 1.5 year, and was then lost to follow-up

Glaucoma Compliance

What percentage of glaucoma patients are still taking their medications as prescribed beyond 6 months?

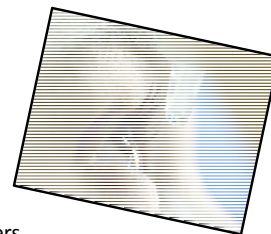
1. 20% to <40%
2. 40% to <60%
3. 60% to <80%
4. >80%



Am J Ophthalmol 2005;140:598-606

Glaucoma Compliance

- Who is At-Risk for Non-compliance?
 - Younger age (<50yo)
 - Racial/Ethnic minority
 - Worse general health (polypharmacy)
 - Shorter duration of glaucoma therapy (<10yrs)
 - Admitting to not following doctors' orders



Glaucoma Compliance

- Identifying Poor Compliance
 - Need to differentiate poor response to medication from poor compliance
 - Allow patient to "save face" and be honest regarding compliance
 - Variability of IOP (baseline vs medicated)
 - Refill data



Glaucoma Compliance

- Managing Compliance
 - Cost barriers
 - Generics, GoodRx.com
 - Communication barriers
 - Dr-Pt relationship, Bottle review, Forms
 - Patient barriers
 - Dose schedule, Cell-phone alarms, Surgery



Glaucoma Compliance

Six Steps to Improving Interpersonal Communication with Patients

1. Slow down
2. Use plain nonmedical language
3. Use pictures
4. Limit the amount of information
5. Use the “teach-back” technique
6. Create a shame-free environment

KEY POINTS

- Poor compliance with glaucoma therapy is common
- Identify and address potential causes of noncompliance (financial, language, cognitive)
- Improve interpersonal communication skills
- Consider surgical alternatives to medical therapy



CASE #10

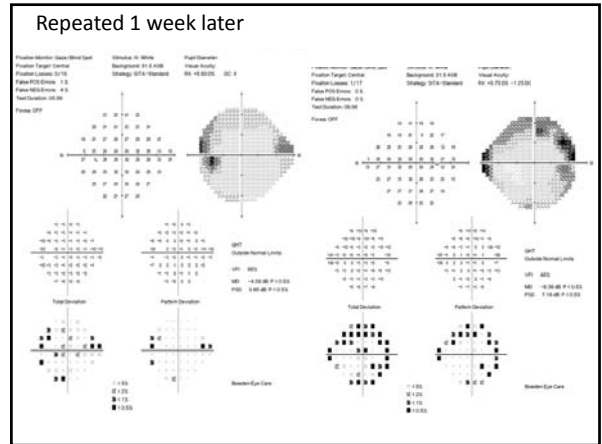
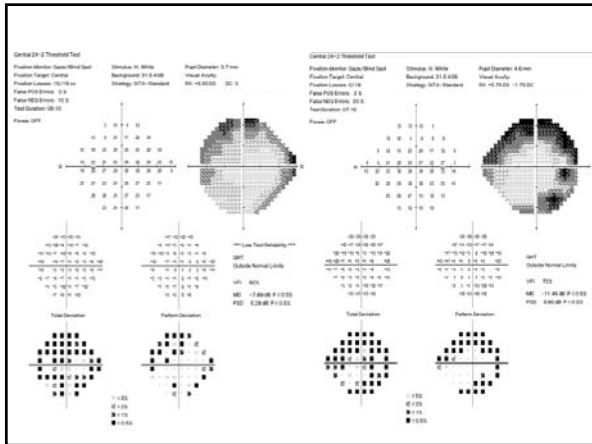
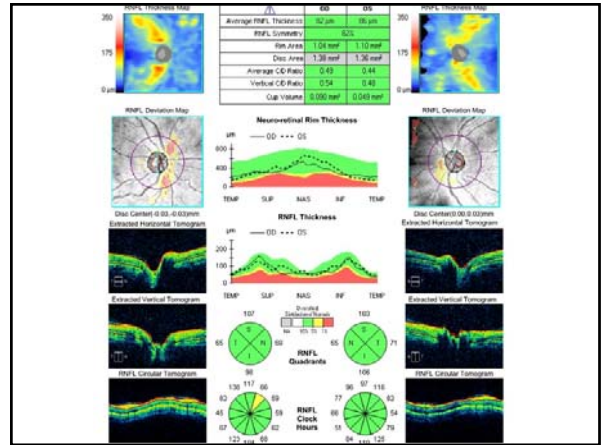
CASE #10

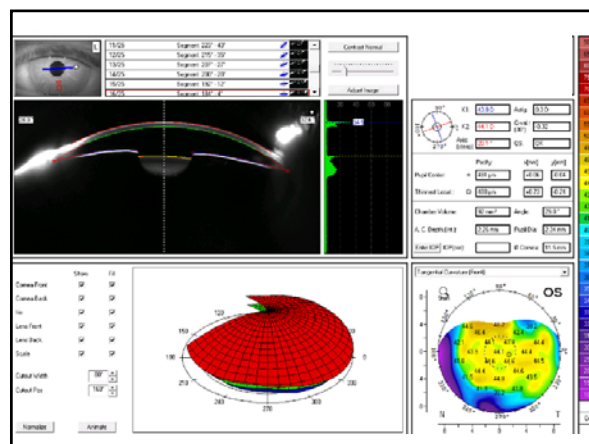
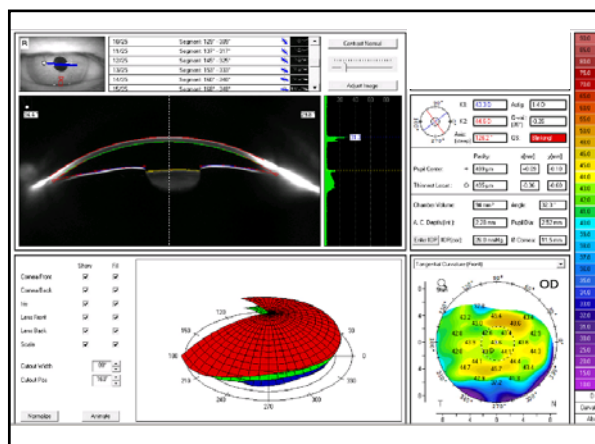
- 61yo HF
- CC: DM eval, blur that fluctuates with BG levels
- Oc Hx: Unremarkable. LEE 2 years ago
- Oc Fam Hx: Father- blind following cataract surgery
- Med Hx: Type 2 DM on insulin, HTN, chol, psoriasis, thyroid dysfunction. LME: 1 mo ago. Smokes 1 pack per month.
- Meds: Unknown chol/ HTN/ thyroid meds, insulin

CASE #10

- EOMs/pupils/CF: unremarkable OU
- Refraction
 - OD +2.50 -1.25 x 055 Add +2.50 Dva 20/20 -2
 - OS +2.75 -1.50 x 091 Add +2.50 Dva 20/20 -2
- IOPs:
 - 24/24 @ 4:16pm
- SLE: Tr CS OU. VH 4 OU
- Gonio: D35r, 1+ TM pigment OU

Initial visit @2:17p 24/24
 Day 20 @1:19p 28/26
 Day 26 @ 11:53a 25/24
 Day 31 @ 9:25a 20/20





Glaucomatous VF Loss

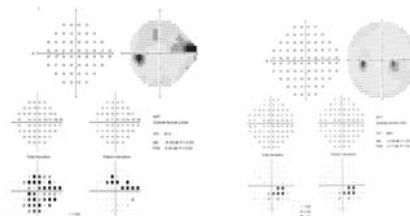
- Usually localized loss (but can be general/nonspecific)
- Tend to respect the horizontal
- Increased variability (long term and short term fluctuation)
- Inferior arcuate NFL bundle preferentially affected
- 90% of early defects are central



Glaucomatous VF Loss

– Early defects

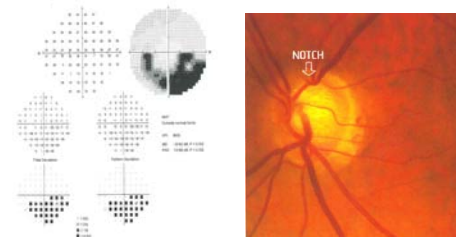
- Paracentral scotoma with nasal step (50%)
- Isolated paracentral scotoma (25%)
- Isolated central nasal step (15%)
- Isolated peripheral nasal step (7%)
- Temporal wedge defect (rare, 3%)



Glaucomatous VF Loss

– Late defects

- Arcuate scotoma
- Altitudinal defects



KEY POINTS

- Structural and functional assessments should correlate in glaucoma VF loss
- Glaucomatous VF defects tend to respect the horizontal whereas retinal VF defects rarely show horz or vert respect
- Perform gonio on DM patients with elevated IOP



