SCLERAL LENSES: GO BIG OR GO HOME...

CHAD MORGAN, O.D.
THE EYE INSTITUTE, RALEIGH, NC

DISCLOSURES

• Paid Consultant/Lecturer
  -Synergeyes
  -Alcon
Clinical Case Contributor
  -Art Optical
SCLERAL HISTORY FIRST

• Late 1800s
  • 1888-Adolf Fick
    • Used blown glass “vesicles”
  • 1888-Eugene Kalt
    • Glass “contact shell” to improve keratoconus
  • 1889-August Mueller
    • Doctoral dissertation
• Problems in the 1800s
  • Transportation
  • Healthcare
  • Etc etc
• Problems with Sclerals in the 1800s
  • Oxygen

SCLERAL HISTORY LESSON CONTINUED

• The early 1900s
• PMMA
  • Advent of great material that allowed for impression molds
• Problems in the early 1900s
  • World Wars
  • Dust Bowls
  • Etc etc
• Problems with scleral lenses in the early 1900s
  • Hypoxia
    • Fenestrations placed in lens for O2 transfer
    • Next problem...? Dry Eye/Bubbles
SCLERAL HISTORY GOES ON

• Mid 1900s
  • Corneal contact lenses are introduced
  • Made smaller to allow for better oxygen transfer
  • Manufacturing “better” to allow for reproduction
  • Development of RGP lens materials to allow for higher dk/t transfer to further reduce complications that were related to lack of oxygen to the cornea

CONTACT LENS HISTORY IN THE 1960S AND 1970S

• Increase in the demand for contact lenses
• Early soft lenses introduced were “breathable” option and could therefore extend past the cornea onto the sclera
• Hydrogel lenses offered less initial lens awareness than RGPs
THE LATE 1900S

- We have all been born
- SiHy lenses ribal rgp dk/t.
- Now available to correct all forms of refractive error and available to correct forms of corneal disease.

THE RE-EMERGENCE OF SCLERAL LENSES… WHY?

- 1970s saw the use of RGP materials in scleral lenses
- The introduction of the computer
  - Computer assisted manufacturing has allowed for repeatability and lathes to be developed
  - Labs are now able to readily reproduce scleral lenses
BASIC FITTING PRINCIPLES OF SCLERAL LENSES

• Fit on the sclera
• Assess apical clearance
• Assess limbal clearance
• Over refract on top of the lens

FITTING ON THE SCLERA

• Look for Edge Lift or Blanching
  • Edge Lift (discomfort will be reported)
  • Blanching (lens may feel great)
• Adjust the power of the toric peripheries based on your clinical findings by steepening or flattening the landing zone.
APICAL CLEARANCE

- 200um apical clearance
- 100um of limbal clearance
- Change the sagittal depth accordingly / or vault of the lens
- Change the base curve of the lens to adjust limbal clearance
  - Steepen base curve to decrease limbal clearance
  - Flatten base curve to increase limbal clearance

OVER REFRACTION

- Always start with sphere
  - Do not forget to vertex and when ordering the lens let your consultant know if you have vertexed or not
- Search for astigmatism when necessary
  - Always chart or diagram where the toric markings are on the lens
  - Do not forget to vertex and when ordering the lens let your consultant know if you have vertexed or not
TAKING IT WAY BACK

• Pressure = Force/Area

• I want to keep the amount of force the same and increase the area

• Let's keep it simple
  • The amount of force is constant at 4. What happens to the amount of pressure when the area is changed from 4 to 8
  • $P = \frac{4}{4} = 1$ to $P = \frac{4}{8} = 0.5$
  • Increasing the amount of area decreases the amount of pressure
TROUBLESHOOTING THE SCLERAL

• My Most Common Problems
  • Pt application and care compliance
  • Patient Symptomatic
    • Discomfort
    • Blurred Vision
  • Fit Complications

PATIENT APPLICATION AND CARE COMPLICATIONS

• Insure that staff understand insertion and removal and are able to train
  • Lightly place the lens on the eye
• Know exactly what solutions are approved for your specific lens and enforce and then reinforce this at each visit. Know exactly how the lens should and can be stored. Wet or dry?
• 1 plunger is not enough.
• WASH your hands and do your best not to touch the center of the lens
• Technicians reinforce handling instructions, solutions and techniques
• Reinforce at each follow up
### PATIENT SYMPTOMS

<table>
<thead>
<tr>
<th>Discomfort</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Lens Discomfort</td>
<td>Loose Lens Fit/Edge Lift</td>
<td>Tighten Peripheries/Increase Sag</td>
</tr>
<tr>
<td>Discomfort after wear</td>
<td>Tight Lens Fit/Impingement</td>
<td>Loosen Peripheries/Decrease Sag</td>
</tr>
<tr>
<td><strong>Blurred Vision</strong></td>
<td><strong>Cause</strong></td>
<td><strong>Solution</strong></td>
</tr>
<tr>
<td>Blur Immediately</td>
<td>Lens Flexure</td>
<td>Increase C.T.</td>
</tr>
<tr>
<td>Blur after wear</td>
<td>Lens Surface Debris/Non-Wetting</td>
<td>Lid Hygiene Plasma Treatment Proper Care</td>
</tr>
<tr>
<td>Blur after wear</td>
<td>Tear Layer Debris</td>
<td>Remove/Clean/Refill/Reapply Excessive Corneal Clearance or Excessive Limbal Clearance Edge Lift</td>
</tr>
<tr>
<td>Blur and Discomfort After Wear</td>
<td>Bubbles</td>
<td>More I and R technique training Assess Toric Peripheries/Quadrant specific design</td>
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<tr>
<td></td>
<td>Excessive Edge Lift</td>
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### LENS COMPLICATIONS

<table>
<thead>
<tr>
<th>Cause</th>
<th>Solution</th>
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</thead>
<tbody>
<tr>
<td>Conjunctival Impingement</td>
<td>Steep periphery if at lens edge Flatten peripheral curves to more evenly distribute lens bearing</td>
</tr>
<tr>
<td>Flat periphery if inside lens edge</td>
<td>Steepen peripheral curves to more evenly distribute lens bearing</td>
</tr>
<tr>
<td>Asymmetric scleral if sectoral</td>
<td>Consider toric or quadrant-specific peripheral curves</td>
</tr>
<tr>
<td>Lens adherence</td>
<td>Lens flexure Increase lens thickness</td>
</tr>
<tr>
<td>Insufficient corneal / limbal clearance</td>
<td>Increase vault where needed to ensure sufficient vault in all areas of the cornea and limbus</td>
</tr>
<tr>
<td>Significant lens settling</td>
<td>Increase vault</td>
</tr>
</tbody>
</table>
## CONJUNCTIVAL BUNCHING

<table>
<thead>
<tr>
<th>Causes</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loose Conjunctival Tissue</td>
<td>Age/Person?</td>
</tr>
<tr>
<td></td>
<td>When to Worry = Corneal Neo</td>
</tr>
<tr>
<td></td>
<td>Surgically Excise if necessary</td>
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</tbody>
</table>

**WHAT DOES TIME MEAN TO YOU?**
TIME IS AN INVESTMENT, INVEST YOUR TIME WISELY

- When incorporating specialty scleral fitting in your practice:
  - Know the lens
  - Know one lens and know it well
  - First visit is the most importance visit. It takes time
  - Know the lens
  - Know one lens and know it well

MEDICALLY NECESSARY INDICATIONS

PATIENT CASE #1
ACQUIRED NYSTAGMUS.

- 7/15/2016 Pt referral for contact lens exam after treatment of corneal ulcer. Pt has finished cipro qid x 2 weeks and has been released for contact lens exam.
- Pt pertinent review of systems
  - History of keratoconus with treatment via RGP Rose K lenses.
  - Acquired Nystagmus from TBI sustained in Iraq War
  - Pt is wheel chair bound and is paralyzed from the waist down.
  - Pt has upper body mobility
  - Difficulty with verbal communication
  - Mentally capable and aware.
  - Pt is on several medications that I have never seen before that control bodily functions and frequent seizures.

PATIENT CASE #1
ACQUIRED NYSTAGMUS VISIT #1

- Chief complaint: Blurred Vision, history of RGP wear. Pt complains of vision through RGP’s and would like a pair of glasses to correct his vision. Pt wife performs all insertion, removal, and lenscare. Pt reports his vision is getting worse.
- Unable to perform topography
- Unable to perform slit lamp exam
- Handheld autorefractor used in attempt to obtain K readings. Unable to obtain any measurements.
- Handheld slit lamp used to assess anterior seg:
  - Apical corneal scarring noted
  - 2-3+ blepharitis noted
- BIO used to assess posterior pole:
  - WNL with difficulty in assessment of retina. ONH and posterior pole WNL via glancing views. Marginal reliability in interpretation
PATIENT CASE #1
ACQUIRED NYSTAGMUS VISIT #1

- The vision exam
  - Current RGP OD Rose K (unknown power): 20/150
    - Noted excessive Apical touch
  - Current RGP OS Rose K (unknown power): 20/150
    - Noted excessive Apical touch
  - Current Spec Rx:
    - OD: -5.25-4.75x090 to 20/200 blur
    - OS: -4.00-6.00x017 to 20/200 blur
  - Wet Retinoscopy:
    - OD: -4.50-7.50x070 to 20/150
    - OS: -2.50-6.50x170 to 20/100
  - Wet Retinoscopy over unknown Rose K lens:
    - OD: -3.00 to 20/70—
    - OS: -4.50 to 20/80—

PT AND WIFE VERY HAPPY… Unable to afford new Rx with specs. My emotions continued on next slide.

PATIENT CASE #1
ACQUIRED NYSTAGMUS… MY THOUGHTS

- Does the patient need a corneal consult?
- Should the patient have some sort of surgery?
- The patient’s wife takes care of patients contact lenses, should I stay in the Rose K lens for ease of handling and care?
- The patient has chronic history of corneal ulcers with treatment… there is no implementation of topical therapy for blepharitis?
- Yes, you have been cleared for contact lens wear, but should you be wearing contact lenses before our fitting?
- How am I going to get this covered?
- I better brush up on my Rose K fitting
PATIENT CASE #1
ACQUIRED NYSTAGMUS

• Pt returns after 3 weeks in a specialty slot appointment + one full exam slot.
• Has not worn contacts in 3 weeks.
• Reports great vision out of his specs.
• Pt is using Avenova bid as directed.
• OD: takes 3 Rose K2 trials before adequate fit. (Remember we were not able to get K readings).
  • +6.50 Wet Ret to 20/70-
  • Order standard steep periphery d/t excess edge lift
• OS: takes 5 Rose K2 trials before adequate fit.
  • +5.50 Wet Ret to 20/70-
  • Order standard steep periphery d/t excess edge lift.

PATIENT CASE #1
ACQUIRED NYSTAGMUS

• 11/4/2016
• Pt wife is to pick up lenses and let patient wear for 3 weeks.
• To assess fit 3 weeks after dispense to insure that the fit has not changed and that there is not corneal rebound.
• Pt returns wearing contact lenses 3 weeks later
  • Reports being able to see the tv
  • Wife and pt both report that nystagmus has reduced. Not sure if it is change of seizure meds or change of contacts.
  • I finalize lenses and strongly encourage backups
PATIENT CASE #1
ACQUIRED NYSTAGMUS….IT CONTINUES

• 6/7/2017 Pt returns for 6 month f/u.
  • Wife reports a decline in overall health since last exam.
  • They have lost one lens and broken another. Pt wife wants to know if we can get more lenses for him.
    • My lab informs me that we had already ordered one lens during the warranty period back in 1/2017 because one lens had been lost.
    • We are unable to get lenses under warranty. Pt will come out of pocket.
    • We inform patient of out of pocket costs
  • Blepharitis is in control and patient is to continue avenova

PATIENT CASE #1
ACQUIRED NYSTAGMUS CONTINUES

• 2/17/2018 Pt returns for 6 month f/u. Pt is not wearing any lenses.
• Wife wants to know if we can adjust his glasses and make them any stronger
  • There is no change in ret refraction (A good thing!)
  • It is a new year. Let’s see if the VA will cover another set of lenses or if they will cover….A SCLERAL LENS
  • I let the wife know that we will not order any lenses until pricing and/or coverage is known, but I would like to move forward with the fitting today.
  • My thoughts… is this possible!

• 2/17/2018 Scleral Fitting
  • The plunger… helped me tremendously.
  • The positioning… Very capable when loosening straps that hold patient into wheel chair
  • The nystagmus…. How is this going to work… I am going to spill all of the solution… The lens goes right on on the first try!
PATIENT CASE #1 CONTINUES

• Short and not sweet.
• OD: 8.04/16.5 4800 depth with near plano power with over refraction to 20/70+
• OS: 8.04/16.5 4800 depth with near plano power with over refraction to 20/70+
• The Short:
  • Pt very happy again. The wife is capable and very confident she can do this as well.
• The Not Sweet:
  • The VA does not cover the scleral design. The Rose K2 has been inadequate.
  • I call the wife to inform her of coverage. Wife does not wish to proceed until she can find funds for the lenses
  • I know that I am leaving NCEENT and placed the lens on hold until further notice

PATIENT CASE #1....7/3/2018
IT ACTUALLY CONTINUES

• Patient finds me and has been scheduled in a routine exam slot (again/?)
• Pt is still wearing glasses. Would like to know if we can update again
  • I perform ret over the top of his glasses with minimal noted change in refraction
• Clinical findings
  • 1.) Severe keratoconus OU. Pt has broken and lost prior Rose K RGP lenses.
    • Pt has broken Rose K RGP lenses
    • Pt is corrected to 20/200 vision OD/OS in specs
    • Apical scarring noted OU. OD>OS
    • Unable to perform any type of topography/keratometry reading d/t immobility
  • 2.) Severe nystagmus in all directions of gaze noted post TBI from Iraq War injury.
    • Reported reduction in nystagmus with contact lens correction
  • 3.) Past history of TBI
    • Minimal Verbal skills.
    • Pt is immobile d/t condition
    • Pt’s wife is caretaker and will perform insertion and removal
PATIENT CASE #1
TREATMENT AND PLAN

• Pt fit in 16.0 scleral lens successfully 7/3/2018.
• Pt ed on improved overall visual acuity through contact lenses to 20/60 after retinoscopy performed on top of diagnostic lenses.
• To place order on hold until authorization for materials for coverage of scleral lenses.
• I personally write and contact the VA. I speak with the head nurse at the facility regarding the emergent situation for patient given
  • Denied again
• I contact lab regarding Sharing Vision Program
  • Patient agrees to submit form
  • We agree to submit form
  • We agree to video testimonial after lenses are fit

9/12/2018
THE RESULTS ARE IN!

• We are approved, BUT…. For the wrong lens. We are approved for a hybrid lens. The lens we fit is not a part of the Vision Sharing Program.
• We submit forms again and I contact the program executive regarding the scleral lens needed
• 9/17/2018 WE ARE APPROVED!
LESSONS LEARNED FROM CASE #1

- Be ready to completely commit to each and every patient.
- Dexterity matters
- Reduction of Nystagmus?
- Remember your retinoscopy. Ret bars are great.
- Use your fit set to assess the cone
- You can scleral a nystagmus
- You can scleral without an OCT
- You can get in the Army with keratoconus?

CASE # 2
CONGENITAL NYSTAGMUS

- 7/12/2017
- 57 year old white female pt presents to clinic as a referral for cd eval. Reports contact lenses have been falling out more recently. Current contact lenses are 6 to 7 years old. Pt reports good comfort and good vision in current system.
- Ocular Health History: Congenital Nystagmus.
- Family Ocular Health History: Glaucoma-Mother

- Unknown RGP Rx
  - OD: 20/80
  - OS: 20/80

- Current Spec Rx
  - OD: +4.00 / +3.50 Add to 20/200
  - OS: +4.00/ +3.50 Add to 20/200
PATIENT CASE #2
CONGENITAL NYSTAGMUS

• Pertinent exam findings
• Anterior Segment Exam
  • Nuclear cataracts
  • 1x1 angles 360 OU
• Posterior Exam
  • unremarkable
• Refraction
  • OD: +6.50+1.00x165 to 20/100 +3.25 add
  • OS: +6.50+1.00x165 to 20/100 +3.25 add
  • K reading OD: 48.50/49.25
  • K reading OS: 48.75/49.5
• RGP Evaluation
  • Pancakes
• The Plan:
  • Referral to Glaucoma Specialist for evaluation
  • Ask for K readings to be assessed at eval
  • I need you to wear your glasses for 4 to 6 weeks for this to be successful
  • You can update your glasses

PATIENT CASE #2
CONGENITAL NYSTAGMUS

• The Case of the K’s
• Pt returns without office visit 6 weeks later for K readings
• Pt returns to office 8 weeks later for K readings. If consistent to week 6, allow me to refract.
• They Were! Let’s refract and Get started on contacts
• Patient has had successful PI

• OD: +5.50+1.00x165 to 20/100
  • 49.50/50.25x031
• OS: +5.00+1.00x165 to 20/100
  • 49.75/50.50x143
PATIENT CASE #2
CONGENITAL NYSTAGMUS

• What are our thoughts?
  • Scleral lens?
  • Hybrid?
  • Soft?
  • RGP

PATIENT CASE #2
CONGENITAL NYSTAGMUS

• 9/12/2017
• Returns for check at dispense
  • OD: +6.25 Optimum Extreme BC 7.50/ Diam 9.50 to 20/70
  • OS:+6.00 Optimum Extreme BC 7.60/ Diam 9.50 to 20/70
     • Ideal FL staining OU
     • The patient is very Happy.
     • I had a light bulb moment=total effective power
       • What if I do a high power MF contact lens in addition to prescription reading lenses?
EFFECTIVE FOCAL LENGTH REVIEW
TOTAL EFFECTIVE POWER REVIEW

- Effective Focal Length and Total Effective Power Review.
- \( f = \frac{f_1f_2}{f_1 + f_2 - d} \)

FOR FUN
CASE #2
CONGENITAL NYSTAGMUS

THE RETURN VISIT
- 9/17/2017 Pt returns for check at dispense.
- Optimum Extreme Renovation MF
  - OD: +6.25 / +3.75 add BC 7.5 / Diameter 9.5
  - OS: +6.00 / +3.75 add BC 7.6 / Diameter 9.5
    - Distance Acuity OU 20/70+
    - Near Acuity at 40cm 20/50
    - Near Acuity at 20cm with 2.50 add 20/25-
  - Pl / +2.50 Add PAL rxed OU to be worn full time to prn.

THE PLAN
- Nystagmus: significantly reduced with lens system.
  Good fit of lens in presence of FL. No SPK
- Angle Closure Glaucoma-borderline: Patent PI OU
  with normal IOP (tonopen)
- RTC 6 months for full exam to monitor ctrl / spec system and narrow angle.

PATIENT CASE #2
CONGENITAL NYSTAGMUS

- 2/22/2018 Pt returns for check at dispense. Had broken OD RGP and reverted back to old lenses.
- Hyperopic shift noted and not given.
- Extensive education given regarding back up lenses. Pt verbally agrees to allow office to discard today. Pt to receive lenses through VSP and orders second pair as back up OOP.
PATIENT CASE #2
CONGENITAL NYSTAGMUS

• What we Learn:
  • Know your patient and cater your treatment strategy
  • Multiple lens systems are not just to see the stars and for optometry optics class
  • Low Vision can be achieved through specialty contact lenses
  • FL patterns say a lot. Look at all lenses on the eye. This will save you time in the specialty contact lens clinic

PATIENT CASE #3
EGYPTIAN CROSS LINKING

• 28 y/o Egyptian female presents to clinic from Duke
• History of cross linking 5-6 years ago in Egypt. Has moved to U.S. with her husband that is an MD
• Currently taking xiidra and is in a piggy back system for correction of keratoconus post cross linking OS only. Husband states surgery did not go as planned.
• c/o extreme dryness, tearing, and extreme photophobia.
• Hx of intolerance to RGP. Change of material and intolerance after 4 years to second RGP. Hx of scleral lens fitting with intolerance. Pt has been on antibiotics and was on topical steroids for over 2 years as well
• Currently uncomfortable in Piggyback system
  • OD 20/25-
  • OS 20/30-
THE “OH ‘NO’ MOMENT”

- Pt is being sent from Dr. Preeya Gupta
  - Notes possible PK in future
- Pt has intolerance to all contact lenses.
- Pt husband is an MD
- Our topographer cannot obtain images
- Pt had crosslinking performed in Egypt that did not "go as planned"
- Pt cannot keep her eyes open
- Pt would like to see if there is a pt assistance program through lens company
PATIENT CASE #3 EGYPTIAN CROSS LINKING
START TO FINISH

• Initial lens order
  • OD: 3600 32-36 8.4/16.0 +1.75
  • OS: 3600 32-36 8.4/16.0 +1.50

• Follow Ups
  • 11/20/2017 Pt returns, receives I and R training. Constant blinking during exam and 20/30– vision OD/OS. OCT imaging as expected
  • 12/4/2017 Pt returns after having worn lenses 4+ hours and cannot tolerate lenses well. Continued photophobia. OCT shows apical touch OS and low vault OD
    • Axis at 115 OD and 015 OS
    • OD: -1.25x100 to 20/30—
    • OS: -0.50-0.75x075 to 20/30—

OCT IMAGING 12/4/2017
12/4/2017 CONTINUED

• 3600 sag. Move to 8.2 BC. Stay 16.0. power compensation to +0.25 b/c of BC change.
• 3700 sag. Move to 8.2 BC. Stay 16.0 power compensation to +0.50 b/c of BC change.
• BC change to reduce the limbal clearance

• Possible corneal rebound post piggyback wear.
• Optimum material.

• PT MUST BE SCHEDULED AT 8AM. SHE KNOWS SHE CANNOT BE LATE AGAIN:)

12/28/2017 FOLLOW UP VISIT

• 272 vaulting OD and 280 vaulting OU at highest point. vaulting over corneal irregularity adjacent to scar tissue adequate.

• Pt husband in room and allowed to view scar tissue within central axis OU.
• Achieving 20/25 vision OU with interpretation of blur today.

• OD at 150 rotation with pl -1.25x130 o/r
• OS at 020 rotation with +0.50-1.25x170 o/r
• both to 20/30- blur
12/28/2017

To Order Lenses and pt is to pick lenses up without office visit

To wear lenses in after having on for 4+ hours for OCT and office visit

OD: 32-36 3600 Optimum material +0.25-1.25x140
8.2/16.0

OS: 32-36 3700 Optimum material +1.00-1.25x015
8.2/16.0

1/28/2017

• pt is doing exceedingly well OU.
• Pt reports significant reduction in light sensitivity OU. Pt is able to perform tasks that she has not been able to do in several years.
• Pt reports improvement in dry eye state with less frequent use of Xiidra.
• Pt ed on importance of continued compliance with Xiidra until instructed to d/c by the prescribing physician, Dr. Preeya Gupta.
• Ed on self-awareness of improvement of dry eye. To report to Dr. Gupta if pt does d/c entirely.
• Pt and husband are very appreciative of current state. Pt reports vision and lenses are life changing. She plans on enrolling in university and the couple now have plans that they would not have pursued prior to the lenses.
• During the exam, the slit lamp is performed with ease in comparison to previous exams. Pt is able to keep eyes open without tearing and photophobia.
• Pt sent home in current Synergeyes VS lenses.
• Ed on my type A personality in fitting. If pt perceives prior lenses are better than dispensed lenses to report back to exchange. (+0.25 o/r OD and +0.75 o/r OS)
• Pt is to report back with lenses if new lenses improve vision to ship back for credit.
PATIENT CASE #4
THE CASE OF TWINS

1/24/2018

- Receive referral from pediatric ophthalmologist for contact lens evaluation for 12 year old female twins
- Hx of accommodative esotropia, amblyopia, and patching
- Manifest Rx’ed:
  - OD +7.50-2.25x180 to 20/30+
  - OS +5.25-1.50x180 to 20/25+
  - K reading OD 45.50 / 47.25
  - K reading OS 45.25 / 46.25
- Parents have been in contact lenses and have had Laisk. They state that they will be able to aid in insertion and removal.

First thought is that I have to report back to Peds that the acuity obtained in contact lenses is equal to or better than that found in the manifest refraction

- What are our other thoughts? Pros? Cons?
  - Soft Toric
  - RGP
  - Hybrid
  - Scleral
PATIENT CASE #4
START TO FINISH

• Initial Order
  • OD: Biofinity Toric XR- +8.00-2.75x180
  • OS: Biofinity Toric: +5.50-1.75x180
    • Results: No over refraction and acuity... 20/40- OD and 20/30 OS

• Final Order
  • OD: 7.3/14.5 Flat Skirt at +7.50 to 20/25+
  • OS: 7.4/14.5 Flat Skirt at +5.25 to 20/20 sharp

PATIENT CASE #5
CASE OF THE CHILDREN

• 13 y/o white male presents for consult from peds clinic and wishes to pursue contact lenses for the first time
• Hx of accommodative esotropia, high ametropia and amblyopia
• Hx of mother that would like for all services and materials to be covered by insurance

• Refraction
  • OD: +10.50-0.75x180 to 20/20
  • OS: +11.00-1.00x180 to 20/20

• Keratometry
  • OD: 38.75/39.50
  • OS: 38.50/39.50
# CASE #5
## START TO FINISH

### THE START
- RGP!
- Duette Hybrid!
  - Too flat. Hybrid lens will not work
- Start out economical, comfortable and with best visual potential
  - Intelliwave Front surface silicone hydrogel Torics
  - OD VA: 20/50-
  - OS VA: 20/50-

### THE FINISH
- Scleral VS
- Initial 3600 36-42 OD
  - Needed 3400 34-40
  - 272μm vault and +10.50 over refraction to 20/20 immediately
- Initial 3400 36-42 OS
  - Needed 3400 34-40 (It is already on OD)
  - 269μm vault and +10.50 over refraction to 20/20 immediately

### FINISH #5
- We order 3300 34-42 +12.00 OU
- Pt returns for 1 consult and is doing great.
- Pt has 16 yr old brother. Has 2 diopters more hyperopia. Fitting at the same time.
PT CASE # OOPS WE DID IT AGAIN...THE POST LASIK PROBLEM PATIENT

- 47 year old white female presents to office as referral from Lasik surgeon
- Referral notes include topography and state that patient may benefit from correction in the right eye. Lasik surgery performed with goal of monovision with the right eye for the distance and the left eye for near. There is considerable corneal irregularity of unknown reason or origin post Lasik
- Surgeon calls me for correction of the distance eye. States that the near eye reads really well and pt will be fine.
- Pt husband is a lawyer and will be in the room with pt. Surgeon says that the pt is very nice but the husband is not
THE PROCESS AND THE OUTCOME.

• Refraction
  • OD: -2.50-0.50x162/+1.50 to 20/20-
  • OS: -3.00-2.00x180/+1.50 to 20/50--

• Trial Process
  • 3600 36-42 with mild blanching and excess pooling
  • 3400 34-40 plano lens. 154 um vault and -2.50 over refraction

• Outcome
  • Patient extremely happy with vision. Unhappy with visual prognosis for future
  • Possible further surgery?
  • Air Optix -1.50 OD…. Pt more pleased
  • GPC with Air Optix 6 months later and is now in DAQ. Pt reports scleral is more comfortable than soft lenses on right eye.

CONCLUSION

• History
• Basic Fitting Principles
• Common complications and troubleshooting
• Medical need for scleral lenses in your practice
• Specific case examples
QUESTIONS?

• Thank you!