Innovations in Specialty, Irregular Corneas & KCN with Contact Lenses

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Agenda

- Developing Optometric Subspecialties
- CL market overview and trends
- Specialty Lenses
- Irregular Corneas
- KCN
- Case Studies
All of these terms are used with Large Diameter RGP’s, EXCEPT:

a. Sagittal Height or Depth (SAG)
b. Midperipheral Vault
c. Skirt Size
d. Limbal Clearance
e. Scleral Alignment
Optometric Sub-specialties: Developing a Referral Network
What’s Your Competitive Advantage?

- Why should patients choose your practice?
- Name your competitive advantages

Being more deliberate with business!
What is Your Niche?

- Optometric Subspecialties
  - Primary Care Optometry
  - Cornea and Contact Lenses
  - Geriatric Optometry
  - Pediatric Optometry
  - Low Vision Rehabilitation
  - Vision Therapy and Rehabilitation
  - Ocular Disease
  - Refractive and Ocular Surgery
  - Neuro-Rehabilitative Optometry
Provide Specialty Contact Lenses

Being more deliberate with business!
1. Is a big market for this under-treated Optometric specialty

2. Can be difficult to treat successfully
Prepare

The 3 biggest issues:

1. Getting patients!
   1. Most of these patients will be concentrated at ophthalmology offices (especially cornea specialists).
   2. Reaching out and networking with the cornea specialist will be the most productive route.
   3. Could find a great referral source from fellow OD’s.
Why We Hesitate to Refer to Each Other?

- Lack of awareness
- Fear of losing the patient
- Uncertainty of specialty care
- Medico-legal concerns
2. Experience!
   1. Residency
   2. Build It as you go – the referring doctor will have more confidence in you after several successful referrals.
   3. Workshops
3. **Equipment!**
   1. Topography is the big one
   2. Full range of diagnostic fitting sets that will allow them to fit a wide spectrum of patients is important.
   3. Anterior segment camera or imaging device
Importance of a Referral Letter

- Establish our roles in medical and specialty eye care
- What did you find?
- What are your recommendations?
- When do you plan on seeing the patient again?

“The most important aspects of a referral letter are the diagnosis and your recommendations. Keep it short, sweet and to the point.”
Case Example
<table>
<thead>
<tr>
<th><strong>Chief Complaint</strong></th>
<th>Unhappy with current CL’s. Comfort just ok and vision unstable. Is only wearing CL’s part-time</th>
</tr>
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</table>
| **Previous CL Rx**  | **OD:** Proclear MF Toric 8.4 -1.50-1.75x005 / +1.50D  
                        D: 20/30-   N: 20/40-2  
                        **OS:** Proclear MF Toric 8.4 -1.50-1.75x170 / +1.50N  
                        D: 20/30   N: 20/30-2  
                        Over-Refraction: no improvement with flippers. |
| **Manifest Refraction** | **OD:** -1.50-2.25x004  
                          **OS:** -1.75-2.25x171  
                          **ADD:** +2.25  
                          D: 20/15  
                          N: 20/20 OU |
| **Dominance**       | R eye dominant with +2.00 Fog |
| **Pre-Fitting Conference (PFC)** | Demonstrated issues with respect to astigmatism improvement in crispness – a huge difference and **Discussed New Designs.** |
| **Diagnostic CL Fit** | ?? |
Keratometry Values

- 44/46@180 OD and OS
- 2.00D of corneal cylinder and 2.25DC in MR
- Lenticular Cylinder was less than 0.50DC = good candidate for the RGP MF or Duette MF
Patient View with STCL’s:
Hybrid
Simultaneous Vision
Center near
Continuous change in power (Near to Distance)
Aspheric (lineless)
Two sizes: Small and large
Same power in both zones
- Small zone – power more concentrated
- Large zone – power more dispersed
No add power change each year!!
**Minutes-to-Fit Success Guide**

**SELECT BASE CURVE**
- select base curve from nomogram using flat K

**INSERT LENS**
- insert medium skirt/small zone OU using NaFl

**SELECT & VERIFY**
- over-refract to verify base curve
- if lens power is 0.25 to 1.00 more minus than sph. pwr. of spectacle Rx
  - ~ 1.00D more minus than sph. pwr. of spectacle Rx - flatten base curve
  - less minus than sph. pwr. of spectacle Rx - steepen base curve

**VERIFY BASE CURVE**
- check NaFl pattern to verify skirt
  - if pattern evenly distributed (Fig. 1)
  - See Fig. 3. Insert steep skirt/small zone steep/large

**VERIFY SKIRT**
- if bearing
  - if pooling
- if patient is not happy with vision
  - insert large zone
  - if patient is still not happy
  - over-refract lens and check for uncorrected cylinder

**FINALIZE & DEMONSTRATE**
- over-refract check distance and near vision
- if patient is happy with vision
  - demonstrate vision and order lenses using power conversion tool

**SHOW VISION**
- patient not a candidate
Patient may feel discomfort or awareness under the lid right away.

Patient may not feel immediate discomfort if skirt is too flat. Only after 4-5 hours of wear.
2. Check NaFl for Fit

After 3 minutes, evaluate the pattern.

FIG 1 - CORRECT SKIRT:
thin layer evenly distributed

Green NaFl ring clearly defined
RGP portion uniform & slightly lighter than ring

Patient will be comfortable.
Movement similar to a soft lens.
Duette Multifocal (DMF) vs. Soft Multifocal Vision at Various Distances

(Subjective 0-10 scale)

Clinical data on file
Set Fitting Fees Appropriately

- A contact lens **Fitting or Refitting** is necessary if the patient has no previous history of contact lens wear or if there is a need / desire to change the current contact lens fit. This charge will be in addition to the comprehensive eye examination fee. This fee will cover the initial evaluation and all contact lens related follow-up visits for a period of 3 months. If necessary, it will also include the cost of any additional contact lens training classes needed for those individuals needing contact lens instruction for insertion, removal, and lens care.

  The **Contact Lens New Fit / Refit fee** will range in price depending on the complexity of contact lenses worn:

  - **Standard** Contact Lens Refit (Soft Spherical) $____
  - **Advanced** Contact Lens New Fit (New Wearer) or Refit (Toric, Extended Wear) $____
  - **Superior** Contact Lens New Fit (New Wearer) or Refit (RGP, Multifocal, Hybrid) $____
  - **Medical** Contact Lens New Fit or Refit (CRT, Post Surgical, Keratoconus) $____

- Contact lens prescriptions are valid for **1 year**. Patient Initial____

- I have been advised of the risks of sleeping in contact lenses. I understand that if I am sleeping in my lenses, Drs. Kuhlmann, Miller and Mundy may reserve the right to release the prescription in increments smaller than one year and require additional contact lens checks to assess the health of the eye as professionally necessary.

- I understand that if I have any discomfort including pain, redness, or blurred vision, I am to discontinue lens wear immediately and notify EyeCare Professionals of Powell at 614-793-0700. Dr Kuhlmann’s after office hour’s phone number is 614-582-9096, and Dr. Miller’s number is 614-296-1175.

- I am wearing ________________________________ contact lenses. These lenses are to be discarded every _________________________________. These lenses (have / have not) been approved by the doctor for extended wear. I have been instructed to follow the doctor’s recommendations for lens wear, and I have been informed of the risks associated with non-adherence to this schedule.
Myopia Control

- Great frontier
- Lots of theories, lots of research
- Could be emerging area of specialty
  - Keep eyes open
Myopia Control – How much would change your Prescribing Habits?

a. At least 25% reduction  
b. At least 40% reduction  
c. At least 60% reduction  
d. At least 80% reduction
Myopia Control - Theories

- Outdoor activity is protective for myopia.
  - Hours playing sports and outdoor activities have a lower incidence of myopia.
  - Greater levels of sun exposure results in greater levels of Vit. D in the blood (Don Mutti research)
- Lens de-focus and axial elongation.
  - Peripheral versus central de-focus.
Peripheral retina can mediate refractive development centrally.

This theory = **Peripheral hyperopia** can be a **stimulus** and may even precede the development of Myopia

Difference in animal and human studies are not an exact science.

- It seems to be more complex in human studies. **Put a diffuser on or create a lens that causes relative peripheral myopia can slow axial growth.**
MPC Lenses
Current research data is showing Center-Distance Contact Lens designs can create about 40% reduction in Myopia, better than Orthokeratology.

Research aimed at optimizing this design.

Would like to get to 50% reduction and that may be the ceiling.
Stay Tuned...
Irregular Corneas / Corneal Dystrophy
RGP’s

- Surgical Error
- Post-surgical complication
- Pre-existing corneal dystrophy
- Post-surgical trauma

- Need fitting sets, go through training, workshops, etc.
- Watch for scleral bearing
Post Lasik
Post-Lasik - Go Bigger
Case – Post RK Nightmare

- High Cylinder (3.50DC in each eye) – have tried custom soft toric with no success on stability and vision

- Reverse Geometry, large diameter (12.0mm RGP)
  - Boston EO material
  - Ordered with fitting set evaluation (sent special set into office to try)
Large Diameter RGP’s

- Change modalities as necessary in order to improve outcomes.
- Large diameter lenses work best for severely distorted corneas.
Large Diameter Lens Terminology

- Sagittal Height or Depth (SAG)
- Midperipheral Vault
- Limbal Clearance
- Scleral Alignment
- Compression and Impingement
Keratoconus
Common RGP KCN Lenses

- Rose K
- Comfort Cone
- Miniscleral
- K Vault
- Many more
1. Apical Clearance
2. Apical Touch
3. 3 Point Touch (Korb et al, 1982)

- If showing significant epithelial disruption, consider refitting with sufficient apical clearance. Literature supports less risk of scarring.
Hybrid
ClearKone Lens Design

- New hybrid skirt design lands inside limbus & extends onto the sclera
- Optimized lacrimal lens
- Optics centered over visual axis despite location of cone
- Vault design clears the vast majority of ectasias without bearing
**Vault and Skirt Curvature**

*ClearKone* is available in 11 different vaults of which each can be ordered in 4 different skirt curvatures; flat, medium, steep and steep2.

The vault diameter is 7.4mm and includes the spherical optic zone and reverse curve.

The fit of the vault is independent of the fit of the skirt curve. Each should be fit separately.
Check for Bubbles After Insertion
Improve Insertion Technique
Custom soft contact lenses are becoming more popular for fitting keratoconus patients with several new fitting sets launched in the past year.

Promising reports and studies being reported.

NovaKone (Alden Optical), Kerasoft IC (Bausch + Lomb Boston Group)
NovaKone (Alden Optical)

- Introduced towards the end of 2011.
- Made of hioxifilcon D which is 54% water.
- Standard diameter of 15.0mm, but can be made larger or smaller, as needed.
- +30.00D to -30.00D sphere in 0.25D steps.
- Up to -10.00D cylinder in 0.25D steps from 10 to 180.
- 5 “It Factors” that define center thickness in order to neutralize irregularities.
Definitive Material

- Silicone hydrogel material custom soft lens
- Available through many distributors in a number of custom designs for irregular corneas.
- High Dk (60) and low modulus (0.35 MPa), works well in a number of applications.
- Recommend steeper base curves than traditional HEMA-based hydrogel material.
- Slight increase in GPC incidence
Kerasoft IC (Bausch + Lomb Boston Group)

- Etrofilcon A material = custom latheable silicone hydrogel material that has a water content of 74%.
- The standard diameter is 14.5mm
- Comprised of a large central curve and peripheral curve.
- Can change the whole peripheral area either steeper or flatter to achieve a better fitting relationship.
Kerasoft IC (Bausch + Lomb Boston Group)
It is important to remember two things:

1. If you are a participating provider with a plan, you will need to determine if you need prior authorization.

2. The benefit for "medically necessary" contact lenses is usually in addition to (and not a substitute for) eyeglasses. Check to see if you can also obtain spectacles for your patient as well.
Specialty CL Fits - categorized with corneal GP, piggyback, scleral and hybrid lenses.

Most often talked about is keratoconus, pellucid marginal degeneration, post graft (PK) and corneal dystrophies.
Fitting Contact Lenses –

The prescription of CL's is not part of general ophthalmological services. Not bundled into something else.

Follow-up appointments after a lens are not included in a fitting. If prescribed, can bill for them.

**92070: Fitting of bandage contact lens... has been deleted**
Fitting Contact Lenses –

- 92071 = Fitting of contact lenses for the treatment of ocular surface disease

- 92072 = Fitting of contact lens for the management of keratoconus, initial fitting
Fitting Contact Lenses –

** Neither of those codes include “supply of lens” and will need to be billed with appropriate HCPCS V codes that most closely match the type of lens used.
Understand the rules for Specialty CL’s –

Every subsequent visit is billable and can use 99... Code for that visit.
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There have been many technological advances in the contact lens industry and specialty contact lenses are alive and are growing in popularity because of their many uses.

From Keratoconus to myopia control, it is important to stay up-to-date with the newest technologies available.

Being comfortable with the multiple designs and their uses may open a new group of contact lens wearers.
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THANK YOU!