

OCR Problem Solving

Overnight Corneal Reshaping

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The eye moves, the lens moves and the eyelids move the contact lenses but the challenge in OCR is to make the lens stay centered. One of the most frustrating problems in OCR/CRT/Ortho-K occurs in patients where you just can't get the lenses to center. Initially, it doesn't seem to be a problem because patients are seeing better. But, after working on a few of these cases, you learn that long-term decentered lenses do create problems for us and our patients. The problems that surface include:

- 1) inadequate treatment,
- 2) halos,
- 3) excessive staining,
- 4) difficulty with removal and
- 5) induced astigmatism.

Evaluation of centration

In the office, after the lens has settled on the eye for 5-10 minutes, look at lens position of the lens after a blink. Because the lens is large, it's easy to compare the distance from the edge of the lens to the limbus in 8 cardinal positions to evaluate centration. Another method to evaluate lens position, is to look at the central area of bearing and the fluorescein pooling surrounding it, relative to the pupil. This is the open-eyed evaluation of lens position. This may or may not correspond to the closed-eye position of the lens as determined by post-wear topography. If a lens is slightly decentered in the office, but the topography shows the lens is providing a well-centered treatment, don't change the lens! Remember, topography rules!

If just the opposite situation occurs, ie., good open-eye centration with decentered post-wear treatment area, a change in lens will be necessary. With all the other evaluations we make on a new OCR patients, the first and highest priority should always be a well-centered lens.

Causes of Decentration

- 1) Lens design
 - Alignment curve/Landing Zone Angle too steep or too flat
 - Reverse Curve/ Return Zone too steep or too flat
 - Overall diameter
- 2) Tight lids or unusual lid anatomy – small aperture or angled lid position
- 3) Decentered corneal apex (asymmetric pre-treatment topography)
- 4) High astigmatism
- 5) Unusual sleeping patterns (ie. sleeping with the eye pressed against the hand)

What To Do

- 1) Whichever lens you use, you should know what adjustments to make in lens design and curves to help solve the problem. If you've already made those changes without success, the next step is to increase the overall diameter (I usually go in .3-.4 increments). For example, from 10.5 to 10.8 or 10.6 to 11.0mm.

2) Second, for lenses that are especially high or low, some cases resolve by changing the center thickness (thicker or thinner as necessary). There are practical limits to the amount of change in this parameter. Lenses too thin may have too much flexure and be prone to cracking. Lenses that are too thick may cause increased lens sensation.

3) Occasionally, I have found it helpful to change from one design to another. I've seen some cases center better with a custom design and some better with a Paragon CRT lens.

4) For high amounts of astigmatism, I have found very good results with custom-made reverse-geometry lenses with toric alignment curves and toric peripheral curves.*

5) At this year's GOS, I learned of the reverse-geometry Macrolens (15.0mm) which stays very well-centered with very little movement. I see this as a great solution for decentering but I have no experience with it to date.

6) Finally, in cases that have not resolved after multiple lens changes over weeks to months, it may be helpful to evaluate what has been used and have the patient discontinue OCR wear to allow the eye to return to its original condition and make a fresh start. Sometimes, the experience you have gained along the way, may allow success once the cornea has recovered from its decentered contour.

A final word, the combination of careful evaluation of lens position at the slit lamp and good pre and post-treatment topography is critical to interpretation of OCR effects. Also, these difficult cases are more challenging but can be more rewarding for you and your patients.

* Available from C & E GP Specialists in Phoenix, AZ

Dr. Michael J. Lipson is an optometrist with the University of Michigan's Kellogg Eye Center. He practice is primarily contact lenses with a large percentage of specialty contact lens patients: keratoconus, post-graft, OCR (overnight corneal reshaping), bifocals and prosthetics. He attended Illinois College of Optometry and had been in private practice for many years prior to joining Kellogg. He is currently conducting a research study titled "OCR vs. Soft Daily Wear, A Visual Quality of Life Study."



OAA PROMOTES EDUCATION “THE ESSENTIALS OF CORNEAL RESHAPING”



August marked the beginning of what will be the OAA's first big step into continuing the education of orthokeratology. At the University of Houston the OAA led a two day twelve hour seminar called The Essentials of Corneal Reshaping. The purpose of this event was to provide a hands on platform for beginning and more experienced Orthokeratologists. This event was a unique experience where OAA members headed lectures providing their expertise and experience. The course also provided a very productive interactive element where FDA approved major lens designers participated. Attendees were able to interact with subject patients where various lenses provided from company exhibitors were shown in a unbiased format. The end of the seminar concluded with an invigorating panel discussion to help shed light on individual practice tips and experience.



OAA participants included Drs. Norman Leach, Sami El Hage, Allen Chin, Bruce Williams, Tommy Yee, S. Barry Eiden, and Cary Herzberg.





Attending participants from beginning to seasoned skill levels separated into small groups and fitting rooms. With OAA doctors and lens company representatives on hand attendees were given a unique “hands on” opportunity to interact with patient subjects. The focus of this exercise was to go straight from lecture to method. Subjects were open to communicate their own experiences and answer related questions dealing with fits, comfort, and results.





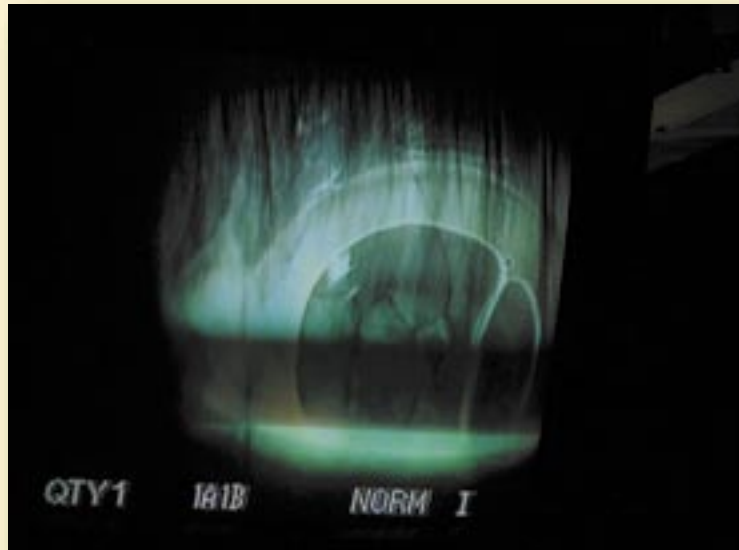
Representatives from lens design companies were on hand to talk with attendees and participate in the events. The OAA made it a point that there was no lens endorsement or exclusive approval. The forum was left open to help create an educational dialogue. This was dubbed as the “whos who” of the lens industry. Representatives set up tables and information and expertise on hand to share.



Companies that attended:

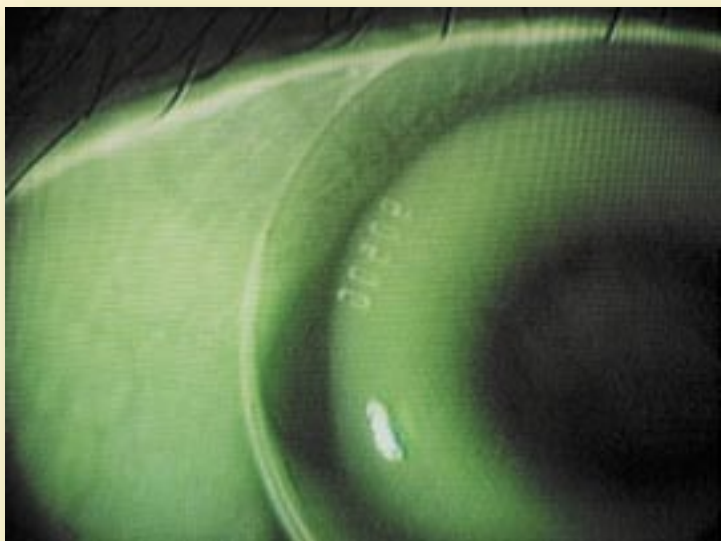
Polymer Technologies, Euclid, True Form, Paragon Vision Sciences, SEGP Labs, and C&H





"It was a well organized event, especially the florescence patterns compared on the same patient with 3 different FDA approval designs, and performance/trouble shooting. I highly recommend both beginning & experienced colleagues to attend such a seminar. We all learned a lot from it, good job to the OAA and UHCO."

- Tommy Yee OD





“I was disappointed, although not surprised, that more optometrists did not register for this very informative Ortho-K continuing education seminar. Many opportunities throughout the years have been there for O.D's to learn about orthokeratology but many optometrist still do not believe it works or they do not see it as a marketable specialty. I strongly believe that if optometry schools don't do a better job of educating our new graduates on the art and science of rigid gas-permeable contact lens fitting, new graduates will tend to fit only soft contact lenses and the only good rigid gas-permeable fitters will be the certified contact lens opticians. Seminar patient testing showed that all the FDA approved lenses were effective in quickly reducing myopia. So anyone attending the Houston Event would know that Ortho-K indeed works. All they have to do was to decide which brand of lens to use and learn how to fit it!”

- Allen Chin OD