Scleral Lens Applications for Normal Corneas
Stephanie L. Woo, O.D., F.A.A.O
Fellow of the Scleral Lens Society

Disclosure Statement:
• Paid consultant for Blanchard, X-Cel, Specialeyes

Please silence all mobile devices. Unauthorized recording of this session is prohibited.

Current Scleral Lens Applications
• Irregular corneas:
  • 1
  • 2
  • 3
  • 4
  • 5
  • 6

• Dry Eye/ OSD:
  • 1
  • 2
  • 3

Normal Cornea Applications
• Fitting Process:

• Diameter:

• Clearance:
Normal Cornea Applications

• Edges:

Normal Cornea Applications

• Long-term health

Predicted values of oxygen transmissibility (Fatt Dk/t units) under the center of scleral contact lenses with a Dk of 150.

Predictive values of oxygen transmissibility under the periphery of scleral gas permeable contact lenses.
Normal Cornea Applications

- Apprehension

Good Candidates (with normal corneas) for scleral lenses

- High hyperopia

Good Candidates (with normal corneas) for scleral lenses

- High Myopia

- Astigmatism

What if they don’t have astigmatism?

What about residual astigmatism?
Good Candidates (with normal corneas) for scleral lenses

Anisometropia

Aphakic

Presbyopia

Dry Eyes with soft lenses

Patients unhappy with current soft toric lenses

CLINICAL EVALUATION OF A LARGE DIAMETER RIGID-GAS PERMEABLE LENS FOR THE CORRECTION OF REFRACTIVE ASTIGMATISM

- This was a multi-site clinical study
  - University of Montreal
  - Illinois College of Optometry
  - Ferris State University - Michigan College of Optometry
  - University of Missouri - St Louis College of Optometry
Purpose

• To validate the clinical performance of a new mini scleral lens in a group of subjects with low-to-moderate (0.75D to 2.75 D) refractive astigmatism.

• To demonstrate whether soft toric or scleral contact lenses offer the best option for the correction of this refractive error.

Methods

• Multi-site, cross-over, randomized study.

• Forty (10/site) healthy soft contact lens wearers, non symptomatic, were randomly assigned to Group A or Group B
  – A: Fitted with a soft toric first and a scleral second
  – B: Vice-versa

• Lenses used
  – Comfilcon A Toric lens
  – Tyro 97, 14.3mm scleral lens

Results

• 36 subjects completed the study
  11 males and 25 females

• Mean age: 25.3 (+ 3.7) years old (range 21-42).

<table>
<thead>
<tr>
<th>Lens</th>
<th>D1</th>
<th>D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toric</td>
<td>-2.00</td>
<td>-2.75</td>
</tr>
<tr>
<td>Scleral</td>
<td>-2.75</td>
<td>-2.75</td>
</tr>
</tbody>
</table>

Results – Subjective evaluation

• No statistical difference in COMFORT

• No difference for vision while performing day-to-day tasks.

Results – Subjective evaluation

• Soft lenses considered easier to handle

• But sclerals are preferred for vision

• 52% will remain in sclerals for the future.
Conclusion

• 36 completed the study: 19/36 preferred scleral in forced choice
• 75% preferred vision of scleral lens
• Comfort and wearing time were equal

Conclusion

• Scleral lenses can become mainstream if they are applied to regular corneas and current refractive errors
• This study proves that these lenses can be easily fitted and are well tolerated
• Sclerals can represent the future of astigmatic correction in contact lenses

Good Candidates (with normal corneas) for scleral lenses

Current GP wearers

Stability/centration/comfort

No foreign body entrapment

No lens dislodgement

Good Candidates (with normal corneas) for scleral lenses

Piggyback patients

Scleral Lens Fitting Process

• Addressing scleral lens options to patients
  – Presentation of options
  – Pros and cons of scleral lenses

Scleral Lens Fitting Process

• Reducing apprehension
  – Cost
  – Lens Warranty
  – Can they go back to old lenses?
  – Fitting agreement
  – Insertion/removal assistance and resources
Scleral Lens Fitting Process

• Fitting Process:
  • Diagnostic vs Empirical

Scleral Lens Fitting Process

• Inserting the lens

Scleral Lens Fitting Process

• Evaluation of the fit

Scleral Lens Fitting Process

• Removal

Scleral Lens Fitting Process

• Troubleshooting
Scleral Lens Fitting Process
• Lens Dispense visit
• Insertion/removal/lens care

Scleral Lens Fitting Process
• 1 week follow up
• What to look for:
• Questions to ask

Scleral Lens Fitting Process
• 1 month and 3 month follow up:
• What to look for:
• Questions to ask

Clinical Pearls
• Good Candidates

Clinical Pearls
• Addressing Patient Concerns

Clinical Pearls
• Practice Builder
Clinical Pearls

• Cutting edge of technology

Clinical Pearls

• Troubleshooting

Clinical Pearls

• Future of GP lenses

Please complete your session evaluation using EyeMAP™ online at http://eyemap.cistems.net

Tweet about this session using the official meeting hashtag #aaoptom14