Refractive Stability One-Year After the DMEK Triple

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Financial Disclosures

• The authors have no pertinent financial conflicts of interest to disclose.
Purpose

- To investigate refractive stability between 6- and 12-months after the DMEK triple procedure.
Methods

Devers Standardized DMEK technique

- Pre-stripped tissue from the Lions VisionGift
- S-Stamp
- Overstripping of the recipient
- Straiko glass injector
- No-touch tap technique
- 20% SF6 bubble
Methods

- Refractive stability was assessed between 6- and 12-month intervals.

**Subjective Refraction**
- SE of the MRx
- Cylinder of the MRx

**Objective Corneal Changes**
- Scheimpflug Topography
  - Pentacam HR (Oculus)
Selection Criteria

Inclusion:
• Fuchs’
• Triple procedure
• 6-month follow-up
• 12-month follow-up

Exclusion:
• VA-limiting comorbidity
• VA-limiting intraoperative complication
## Patient Parameters

<table>
<thead>
<tr>
<th>Cohort (n=35)</th>
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<tbody>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Age, years</td>
</tr>
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<tr>
<td>Pre-Op VA, logMAR (Snellen)</td>
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<td>Pre-Op SE, D</td>
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<tr>
<td>Pre-Op Cylinder, D</td>
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Pre-Op, 6-mo, 12-mo BSCVA

BSCVA

20/24
Range: 20/20 to 20/50

20/37
Range: 20/20 to 20/100

20/23
Range: 20/20 to 20/50

Pre-Op
6-mo
12-mo

LogMAR

0

0.1

0.2

0.3

* P < 0.05

DMEK Triple

* P < 0.05
Manifest SE & Cylinder Stability

Diopters

Pre-Op 6-mo 12-mo

SE

Cylinder

All P > 0.05
Manifest SE & Cylinder Stability

**Change in SE: 6-12 months**

- 66% < 0.5 D Δ
- 94% < 1.0 D Δ

**Change in Cylinder: 6-12 months**

- 57% < 0.5 D Δ
- 97% < 1.0 D Δ
Post-Op Pachymetric Change

Scheimpflug Pachymetry

- **Pre-Op**: 608 microns (Range: 494 to 739)
- **6-mo**: 528 microns (Range: 447 to 626)
- **12-mo**: 525 microns (Range: 477 to 632)

* P < 0.05
Post-Op Anterior K Change

Anterior Corneal Curvature

<table>
<thead>
<tr>
<th></th>
<th>Pre-Op</th>
<th>6-mo</th>
<th>12-mo</th>
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<tbody>
<tr>
<td>Diopters</td>
<td>43.64</td>
<td>43.48</td>
<td>43.55</td>
</tr>
<tr>
<td>Range</td>
<td>41.5 to 46.3</td>
<td>41.4 to 46.0</td>
<td>41.4 to 45.9</td>
</tr>
</tbody>
</table>

* P < 0.05
**Post-Op Posterior K Change**

**Posterior Corneal Curvature**

- **Pre-Op**
  - Mean K: -5.91
  - Range: -6.6 to -5.2

- **6-mo**
  - Mean K: -6.28
  - Range: -6.8 to -5.7

- **12-mo**
  - Mean K: -6.28
  - Range: -6.6 to -5.7

*P < 0.05*
Conclusions

• Manifest SE is stable between 6 and 12 months after DMEK

• 6 months may be a reasonable time point for developing a nomogram for the DMEK Triple in the future

• Corneal power and manifest refraction may stabilize even earlier than 6 months
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