What More Could Possibly Go Wrong?

7 Cases of a Spontaneous Intraoperative Fibrinoid Reaction During DMEK

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- Weill Cornell Medicine
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  - Mark A. Terry, M.D.
  - Michael D. Straiko, M.D.

- Lions VisionGift
  - Zachary M. Mayko, M.S.
Background

- As a postoperative complication, fibrin reactions have been widely described in the literature.
  - Pediatric cataracts, PXF, Uveitis, etc

- Intraoperative fibrinoid stranding is sparsely reported.
Purpose

• To describe 7 DMEK cases complicated by a spontaneous intraoperative fibrinoid reaction.
Video
Methods

• Retrospective review of consecutive DMEKs performed for Fuchs’ with a standardized technique.

• Cases were reviewed for occurrence of an intraoperative fibrinoid reaction.
Methods

• Cases were assessed for:
  – Medical history
  – Donor age
  – BCVA
  – Unscrolling time
  – 6-month ECL
  – Course of the mate cornea
Incidence of Fibrinoid Reaction

- 7 eyes in 6 patients developed fibrinoid stranding.
Surgeon Experience

- Fellow (n=4)
- Attending (n=3)
Recipient Demographics

Can we find a common background?
Recipient Eye Color

- 3/7 Brown
- 2/7 Green
- 2/7 Blue
Recipient Sex, Age

• Median Age: 67 (64-74)

• 100% female
Recipient Medical History

- $\leq 3$ Drug Allergies
- $> 3$ Drug Allergies
Recipient Medical History

- Autoimmune Disease
- Diabetes
- Uveitis
- Vision limiting comorbidities

0%
Donor Demographics

- Median Age: 66 (55-75)
- Median Post-strip ECD: 2849 (2222-3012)
- 7/7 mate corneas transplanted at other centers without complications
- 100%
Standardized Technique

- S-Stamped pre-stripped tissue from LVG
- Overstripping under Healon
- Intraoperative surgical inferior PI
- Use of miochol, rinsed out vigorously
- Straiko modified glass Jones tube
- No-touch tap technique
- 20% SF6 gas bubble
DMEK Triples

- Pseudophakic DMEK
- DMEK triple with acrylic 1-piece IOL
Intraoperative Complications

• Intraoperative hyphema
• No complications
Contralateral DMEK Course

• 4/6 patients underwent contralateral DMEK with 1/4 having a fibrinoid reaction (the 7th eye in this series)
## Results

<table>
<thead>
<tr>
<th>Eye #</th>
<th>Unscroll time (min)</th>
<th>Rebubble</th>
<th>6 mo ECD (cells/mm²)</th>
<th>6 mo ECL (Percent)</th>
<th>6 mo BCVA (Snellen)</th>
<th>6 mo CCT (um)</th>
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Discussion

• Intraoperative fibrinoid reactions are rare in DMEK.

• The etiology is unclear from our series.
  – Could it be related to technique? The patient? The donor?
    • Intraoperative PI
    • Hypotony
    • Iris color
    • Graft preparation
Discussion

• No pathology available at this time – what is this material?
  • Fibrin?
  • De-hemoglobinized Blood?
  • De-pigmented Iris Tissue?
  • Cortical material?
Discussion

• Management
  • Flush Anterior Chamber with BSS?
  • Intracameral anti-fibrinolytics?

• Future Efforts
  • Collaboration among sites to pool data and identify etiology
  • Trials to test possible surgical solutions
Conclusion

• Intraoperative fibrinoid reaction is a rare complication that can make DMEK more difficult.

• This reaction may have deleterious effects on BCVA and ECL, likely related to prolonged intraocular manipulations.

• This series does not reveal any obvious risk factors for the problem.
References


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