MACULAR EDEMA AFTER CATARACT SURGERY IN EYES WITH PREVIOUS MACULAR SURGERY

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Financial disclosures

- The authors have no financial disclosures
- IRB approval has been obtained
Prevalence of patients with CME after cataract surgery in eyes that have undergone MPS/MHS is 9.1% in our study.

CME develops more frequently after CE in eyes that have undergone MP vs. MH surgery.

Development of CME is not dependent on timing of cataract surgery.
Background

Macular hole surgery (MHS) and macular pucker surgery (MPS) in phakic eyes greatly increase risk for cataract formation.

Cystoid macular edema (CME) is a known complication of cataract surgery.

Prevalence and impact of pseudophakic CME in eyes with previous MHS and MPS are largely unknown.
## Background

<table>
<thead>
<tr>
<th>Authors</th>
<th>MH or MP</th>
<th>No. of patients</th>
<th>Type of PPV</th>
<th>SD-OCT</th>
<th>Rate of CME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dugas et al. (2010)</td>
<td>MP</td>
<td>65</td>
<td>20-g PPV</td>
<td>No</td>
<td>1.5%</td>
</tr>
<tr>
<td>Mylonas et al. (2013)</td>
<td>MP</td>
<td>20</td>
<td>23-g PPV</td>
<td>Yes</td>
<td>26%</td>
</tr>
<tr>
<td>Haritoglou et al. (2001)</td>
<td>MH</td>
<td>52</td>
<td>20-g PPV</td>
<td>No</td>
<td>3.8%</td>
</tr>
<tr>
<td>Bhatnagar et al. (2007)</td>
<td>MH</td>
<td>86</td>
<td>20-g PPV</td>
<td>No</td>
<td>9.3%</td>
</tr>
<tr>
<td>Passenard et al. (2010)</td>
<td>MH</td>
<td>53</td>
<td>20-g PPV</td>
<td>No</td>
<td>9.4%</td>
</tr>
</tbody>
</table>
Study Design

• **Purpose**: To determine the prevalence and risk factors for CME after cataract surgery in eyes that previously have undergone macular surgery

• **Methods**: Retrospective consecutive interventional case series
Study Design

• **Inclusion criteria**
  - Eyes that underwent MPS and MHS and subsequent cataract surgery from 2016 to 2018
  - 23 or 25 gauge PPV by single retina practice

• **Exclusion criteria**
  - Pre-existing macular disease (AMD)
  - Previous PPV
  - Previous retinal detachment
  - Combined PPV/Cataract surgery
  - Follow up < 3 months
Study Design

• **Primary outcomes measure**
  • Prevalence of CME

• **Secondary outcomes measures**
  • Visual outcomes
  • Risk factors associated with CME

• Cystoid macular edema defined as:
  • Cystic changes noted on Spectral Domain Optical Coherence Tomography (SD-OCT)
  • Increase in central macular thickness (CMT) of 20 microns or more
## Baseline Demographics

<table>
<thead>
<tr>
<th></th>
<th>Edema</th>
<th>No Edema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of eyes</td>
<td>22</td>
<td>221</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>65.7 +/- 4.7</td>
<td>65.3 +/- 6.2</td>
</tr>
<tr>
<td>Number of females (%)</td>
<td>77.3%</td>
<td>67%</td>
</tr>
<tr>
<td>Mean LOGMAR BCVA (Snellen equivalent)</td>
<td>0.58 (20/80)</td>
<td>0.54 (20/70)</td>
</tr>
<tr>
<td>Mean central macular thickness (microns)</td>
<td>474.8</td>
<td>442.7</td>
</tr>
</tbody>
</table>
Results

- 243 eyes met inclusion criteria
  - 135 with macular pucker (MP)
  - 96 with full thickness macular hole (FTMH)
  - 12 with lamellar macular hole (LMH)
- Prevalence of patients with CME: 9.1%
## Results

<table>
<thead>
<tr>
<th></th>
<th>Eyes with CME</th>
<th>Eyes without CME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean time from macular surgery to cataract surgery</td>
<td>273 days</td>
<td>289 days (p=0.67)</td>
</tr>
<tr>
<td>Increase in central macular thickness</td>
<td>96 microns</td>
<td>3.7 microns (p=0.0001)</td>
</tr>
<tr>
<td>Final visual acuity</td>
<td>20/40</td>
<td>20/30 (p=0.101)</td>
</tr>
</tbody>
</table>
Results

- 22 patients with CME
  - 17 had surgery for MP
  - 5 had surgery for FTMH/LMH
- 221 patients without CME
  - 118 had surgery for MP
  - 103 had surgery for FTMH/LMH

Compared to patients with macular hole (FTMH or LMH), patients with macular pucker were more likely to develop post-cataract surgery CME
  - Odds ratio = 2.97
  - p=0.031 (Chi square test)
Conclusions

- Prevalence of patients with CME after cataract surgery in eyes that have undergone MPS/MHS is 9.1%.
- CME develops more frequently after CE in eyes that have undergone MP vs. MH surgery.
- Development of CME is not dependent on timing of cataract surgery.
- No statistically significant difference in final visual outcomes in eyes with and without CME.
References


