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Risk factors for elevated intraocular pressure on first day postoperative review following pars plana vitrectomy

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Objectives

• To assess the relationship between day 1 post-operative intra-ocular pressure and patient demographic information, lens status, tamponade medium (air, C2F6 and SF6) and laser treatment.

Methods

• Consecutive case study at Calderdale and Huddersfield NHS Foundation Trust.
• All patients undergoing pars plana vitrectomy were pseudophakic or underwent combined surgery.
• Indications for surgery: MH, ERM or RRD.
• None of the patients received prophylactic anti-glaucoma medication.
Results

• 164 patients were evaluated on day 1 post surgery.
• 10 patients had IOP >30mmHg, incidence 6%
• Range 30 – 39mmHg
• Mean 32.5mmHg
• Incidence of hypotony (< 8mmHg) : 5 (2.7%).
Results: Vitrectomy gauge & lens status

<table>
<thead>
<tr>
<th>Indication</th>
<th>23g</th>
<th>25g</th>
<th>27g</th>
<th>Phakic</th>
<th>Pseudo</th>
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</thead>
<tbody>
<tr>
<td>ERM</td>
<td>22</td>
<td>14</td>
<td>25</td>
<td>52</td>
<td>9</td>
</tr>
<tr>
<td>MH</td>
<td>20</td>
<td>13</td>
<td>14</td>
<td>42</td>
<td>5</td>
</tr>
<tr>
<td>RRD</td>
<td>33</td>
<td>3</td>
<td>20</td>
<td>48</td>
<td>8</td>
</tr>
</tbody>
</table>

- No association with postoperative intraocular pressure.
Results:

<table>
<thead>
<tr>
<th>Tamponade</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>37</td>
</tr>
<tr>
<td>C2F6 (20%)</td>
<td>74</td>
</tr>
<tr>
<td>SF6 (20%)</td>
<td>25</td>
</tr>
<tr>
<td>SF6 (25%)</td>
<td>28</td>
</tr>
</tbody>
</table>

- 67 patients had retinopexy during vitrectomy.
- 50 patients received laser treatment, 88% in RRD group, 17 had cryotherapy.
- Number of laser burns ranged from 11-1489 (average 712)
- IOP elevated by 0.3mmHg for every additional 100 burns (p= 0.028)
Conclusion:

• Tamponade with C2F6 or SF6 & increasing number of laser burns predisposes to increased IOP.

• Incidence of IOP > 30 mmhg is low (6%)in small gauge PPV and phacovitrectomy  TSV without prophylactic antiglaucoma medications.

• Incidence of hypotony on day 1 is LOW (2.7%) in tamponade filled eyes.

• Prophylactic anti-glaucoma medication is only justified in high risk patients.