Surgery in patients with uveitis

Lyndell Lim and Anthony Hall
Disclosures

• Off label treatments
• Paid advisory board Bayer
• Paid research support Allergan (makers of Ozurdex)
• Paid research support B and L (makers of Retisert)
• Paid research support Novartis
Causes of Vision Loss in Uveitis

1. Cystoid macular oedema 26%
2. Cataract 19%
3. Glaucoma 11%
4. Permanent macular damage 5%

Rothova et al BJO 1996; 80: 332-336
58yr Female

• 12mth history of:
  • Bilateral granulomatous panuveitis
  • Secondary CME
  • Managed with IVTA
• C/O worsening vision in her left eye despite IVTA
• VAR = 6/9 VAL 6/36
• LE: PSCC +++
“I always need an injection every 3 months”

- Recurrence of inflammation & CME just prior to every injection
- Has now developed bilateral PSCC L>R
Surgery in Uveitic Eyes – Why worry?
Surgery in Uveitic Eyes – Why worry?

1. Exacerbation of inflammation
   • Greater risk with significant posterior synechiae¹

2. Increased risk of post-op CMO²

<table>
<thead>
<tr>
<th>CMO after cataract sx</th>
<th>Uveitic eyes</th>
<th>Control eyes²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mth post-op</td>
<td>12% (5 eyes)</td>
<td>4% (2 eyes)</td>
</tr>
<tr>
<td>3 mths post-op</td>
<td>8% (3 eyes)</td>
<td>0%</td>
</tr>
</tbody>
</table>

¹ Elgohary et al BJO 2007;91:916-921
² Belair et al AJO 2009; 148: 128 - 135
What is the relapse rate of uveitis following cataract sx?

- Retrospective review 101 eyes from 101 pts\(^1\)
  - 15pts (15%) developed uveitis within 3 mths

- Retrospective review 95 pts\(^2\)
  - 17 eyes (13.0%) within 6 months of surgery
  - Of 9 control eyes with uveitis < 3 months, 3 had relapse of inflammation within 6 months

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1 Elgohary et al BJO 2007;91:916-921
Risk factors for developing post-op CMO one month after CE/IOL in uveitis pts (41 eyes with uveitis v 52 eyes without uveitis)

<table>
<thead>
<tr>
<th></th>
<th>Relative Risk</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uveitis vs controls</td>
<td>3.11</td>
<td>0.2</td>
</tr>
<tr>
<td>Hx of CMO vs No hx CMO</td>
<td>3.62</td>
<td>0.14</td>
</tr>
<tr>
<td>Periop oral steroid vs no oral steroid</td>
<td>0.14</td>
<td>0.05</td>
</tr>
<tr>
<td>Active uveitis &lt;3mths vs &gt;3 mths pre-op</td>
<td>6.19</td>
<td>0.04</td>
</tr>
<tr>
<td>Presence CMO &lt;3mths vs &gt;3 mths pre-op</td>
<td>6.17</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Surgery in Uveitic Eyes

• Successful surgery depends on:

1. Pre-op planning and therapy
2. Careful surgery with perioperative steroids
3. Close follow-up
Pre-op Planning Issues

1. Timing
2. Adequate control of inflammation & CMO
3. Realistic patient expectations
   • Recognition of other factors limiting post op VA potential
4. Peri-operative treatment
   • Intra-operative treatment
1. Timing

“Ocular inflammation needs to be quiescent for minimum 3 months prior to surgery”\textsuperscript{1,2,3,4,5}

1 Foster Dev Ophthal 1992, 23: 212-218
2 Foster Ophthal 1989, 96: 281-288
3 Foster et al Ophthal 1993, 100:809-817
4 Moorthy et al AJD 1994, 118:197-204
But what is quiescence?

- Best post-op outcome is dependent on control of pre-op inflammation

- Aim for quiescent disease for at least 3 months prior to surgery
  - <5 WBC / 0.2mm high slit beam in AC or vitreous\(^1\)
  - Not always possible with breakdown BAB
    - Flare usually remains

1 Foster et al Ophthal 1989, 96:281-88
2. Adequate control of inflammation

• For severe, chronic uveitis involving the posterior pole, consider systemic immunosuppression 3 months pre-operatively
  • Particularly in:
    • Uveitis associated with systemic disease
      • Sarcoidosis, Behcets
    • Scleritis
Treat any CMO pre-operatively

• Oral corticosteroids:
  • 7-fold reduction in post-op CMO (RR 0.14; p=0.04)\(^1\)

• Periocular/intravitreal steroid
  • Anti-VEGF\(^2\)
  • intravitreal methotrexate (400ug in 0.1mL)\(^3\)

1 Belair et al AJO 2009; 148: 128-35
2 Soheilian et al J Ocul Pharm Ther 2010; 26(2): 199-206
3 Taylor et al Ophthal 2009; 116: 797-801
3. Realistic Expectations

1. Look for uveitic complications that will limit visual outcome
   • macular scar
   • optic nerve lesion
   • glaucomatous visual loss
Patient counselling

2. Pt needs to be appropriately consented with regard to:
   • realistic post-op expectations
   • risk of exacerbation of inflammation
   • good post-op result depends not only on surgery but *compliance* with pre- and post-op therapy, as well as regular reviews
4. Pre-operative Planning

• Assess for factors that may limit your ability to operate
  • Band Keratopathy
    • May need Na EDTA debridement pre-op
  • conjunctival scarring
    • Speculum may not fit
• PS
• White cataract, etc
5. Peri-operative treatment

Depends on the type of uveitis:

1. **Anterior**
   - **Topical steroid :** g. Pred Forte 6 - 8x/day 1-2 weeks pre-op
   - Consider intracameral triamcinolone in cases with a lot of iris manipulation

2. **Intermediate/posterior/past CMO**
   1. **Systemic steroid :** po prednisone 0.5-1mg/kg/day for 1 week pre-op, OR
   2. **IVTA 4mg/0.1ml**
Systemic steroid vs. IVTA

• Systemic steroid has been the gold standard for many yrs, BUT:
  • Morbidity
    • 99.9% have side effects
  • Complications with Diabetes, Hypertension

• Recent studies have shown comparable results with IVTA at the time of surgery

Systemic steroid prophylaxis for cataract surgery in patients with posterior uveitis

Keith Barton, Anthony J. H. Hall, Paul H. Rosen, Robert J. Cooling & Susan Lightman
Pages 207-216 | Accepted 01 Aug 1994, Published online 08 Jul 2009
Intraoperative IVTA (4mg/0.1ml)

- **Okhravi et al (2007)**
  - 19 eyes of 17 patients
  - Final VA in 17 eyes ≥ 6/12 (1 had optic atrophy, 1 had CMO)
  - No CMO occurred within 4 months post op
  - 3 had IOP rise (managed with drops)

- **Alkawas et al (2010)**
  - Retrospective review of 30 eyes
  - 88% improved 2 lines of vision
  - No uveitis relapse for 4 months post op

IVTA vs. Prednisolone

  • Prospective randomised clinical study
    • IVTA vs. Oral prednisolone
    • 40 patients with either chronic anterior uveitis or intermediate uveitis
  • No statistically significant differences between the 2 gps in:
    • postoperative anterior chamber reaction
    • central macular thickness.
  • 4 patients in IVTA group & 5 in the oral prednisolone group had a recurrence of uveitis
  • 5 patients in IVTA group had ocular hypertension
  • 1 IVTA patient and 3 systemic prednisolone patients developed CME postoperatively.
Oral PNL vs IVTA

• Oral
  • Systemic disease requiring treatment
  • Glaucoma
  • Other eye needs treating

• IVTA
  • Contra-indication to systemic steroids
Specific conditions requiring tailored treatment...
Infectious Uveitis

• HSV / VZV
  • topical aciclovir or systemic aciclovir / valaciclovir
  • HEDS 6% of patients had epithelial recurrence on topical steroids alone

• Toxoplasmosis
  • may consider prophylactic antiparasitic Rx if lesion near ON or fovea
  • relapse rates approx. 36% (5/14 pts) within 4 months CE/IOL*

Chronic non-infectious uveitis

1. Behcet Disease:
   • can predict likelihood of post-op inflammation according to inflammation in year preceding surgery\(^1\)

2. JIA:
   • plan for correction of aphakia

\(^1\) Matsuo et al Ophthalmologica 2001; 215(3): 179-82
JIA in adults

Cataract is common
Visual results are good

Original Article

Juvenile Idiopathic Arthritis Associated Uveitis in Adults: A Case Series

Jayne E. Carmiglia, Cecily L. Whitford & Anthony J.H. Hall

Pages 390-394 | Received 09 Dec 2008, Accepted 15 Jun 2009, Published online 15 Oct 2009

Download citation  http://dx.doi.org/10.3109/09273940903118626
Fuchs Heterochronic Cyclitis

- Pre-op inflammation may not respond to steroid therapy, but post-op inflammation may

- Start PF QID 5-7 days pre-op

- Not unusual to have to maintain topical steroids in the long term post op

- Glaucoma is more common after cataract surgery

Risk Factors for Glaucoma in a Cohort of Patients with Fuchs Heterochromic Iridocyclitis

Jason T Toniolo, Anthony J Hall, Jennifer G Smith, Jaime Levy, Lyndell L Lim

Ocular Immunology and Inflammation 2016 August 5, : 1-7
6. Post-operative care

• Close follow-up is important
  • Need to be seen more often than routine cases
  • Reduce therapy according to inflammation

• Remember:
  • Major causes poor vision post-op are due to chronic uveitis complications (CMO, ERM, glaucomatous ON damage)\(^1\)
  • Inflammation and CMO after cataract Sx better controlled with IVTA cf OFI\(^2\)

1 Akova et al Ophthal 1994 101(3): 473-9

2 Roesel et al AJO 2009; 147: 406-412
Post-operative care

• Be aware of expected outcomes associated with certain diagnoses
  
  • JIA uveitis pts often develop significant post-op inflammation\(^1\)
  • Behcet pts have higher relapse rates and worse VA post-op compared with other aetiologies of uveitis\(^2\)

1 BenEzra et al Ophthal 2000 107(7):1255-60
Conclusion

• Ideally, ocular inflammation should be controlled for at least 3 months prior to surgery
  • Do whatever is necessary to achieve this

• Pre-operative planning is vital
  • Give pre-op immunosuppression (steroid) or intraoperative IVTA
  • Give additional therapy if specific disease requires

• Close follow-up post-op
Thank you