Cataract Surgery in Uveitis

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Cataract surgery in eyes with uveitis is NOT ROUTINE

- It requires much more pre-operative planning
- It is often technically complex
- It carries greater risks
- If carried out at the wrong time, with the wrong treatment (by the wrong surgeon) it can lead to permanent visual loss
Problems of Cataract in Uveitis

• Current level of inflammation?
• Is it safe to perform surgery?
  – Chronic uveitis, well-controlled on treatment - Yes
  – Chronic uveitis, fluctuating/flare-ups – Maybe – higher risk
  – Recurrent uveitis, currently quiescent - Yes
Problems of Cataract in Uveitis

• Anterior segment scarring
  – Surgical access problems:
    • More complex, more prolonged, more traumatic surgery
  – PS division, iris hooks, membrane excision:
    • Fibrinogen released, post-op adhesions
  – Inability to view posterior segment:
    • Difficult decision-making, guarded prognosis
Problems of Cataract in Uveitis

- Multiple causes of visual loss:
  - Unpredictable outcome
  - Risk/benefit ratio? - careful thought
  - Macular oedema? (active or scarred)
Problems of Cataract in Uveitis

• Young patients (Mean age 43):
  – Unilateral presbyopia
  – Long-term prognosis?

• Whether to use IOL? Which type??
  – JIA, flare++
Whether to do surgery at all?
(at this time)

• Does potential benefit outweigh risk?
• Does patient understand implications?
• Can ophthalmologist see enough to monitor and treat posterior segment?
• Should we defer surgery?
Informed consent

• Complex concepts:
  – Multiple causes of visual loss
  – Increased risks, reduced benefits
  – Prolonged post-operative recovery
  – Possibility of further surgery
    • esp glaucoma

• Needs time and patience

• Information pamphlets
Information pamphlets

All the files listed below have been made available by the author in fully editable format for adaptation and use in clinical practice.

Management protocols
- Acute Anterior Uveitis
  - Unilateral
- Aqueous Sampling
- Azathioprine
- Bevacizumab
  - Intraocular
- Cardiovascular Disease in the Uveitis Clinic
- Cataract Surgery
- Ciclosporin
- Ganciclovir - Intraocular
- Health Review Form
  - Instructions
- Health Review Form

Patient information pamphlets
- Anti TNF alpha
- Azathioprine
- Behçet’s Disease
- Birdshot Retinopathy
- Cataract
- Ciclosporin
- Fuchs’ Heterochromic Uveitis
- Glaucoma
- HLA-B27
- Immunosuppression, Vaccination and Travel Abroad
- Intermediate Uveitis
- Juvenile Idiopathic Arthritis Screening
- Macular Oedema
- Methotrexate
- Mycophenolate Mofetil
- New Patient Questionnaire
- Prednisolone
- Sarcoidosis
- Tacrolimus
- Toxoplasmosis
- Triamcinolone
  - Intraocular
- Varicella-Zoster Virus
- Viral Retinitis
- Uveitis
- Viral Retinitis
- Vitrectomy
When to do surgery?

- If possible, when inflammation completely quiet (and has been so for “some time”)

- If not possible, when inflammation suppressed and stable

- Wait for (and use!) “windows of opportunity”

- Resist pressure from patient to operate before you are comfortable to do so
How to prepare for surgery?

**NPJ sliding scale:**

<table>
<thead>
<tr>
<th>Uveitis type</th>
<th>Maintenance treatment</th>
<th>Pre-op treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quiescent AAU</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>2. Fuchs’ uveitis</td>
<td>Nil</td>
<td>PF x6/day 1/52</td>
</tr>
<tr>
<td>3. Chronic AU</td>
<td>Topical steroid</td>
<td>PF x6-8/day 1/52 + Pred 25 if high-risk</td>
</tr>
<tr>
<td>4. Intermediate or stable CPU</td>
<td>Topical + oral steroid</td>
<td>PF x6-8/day 1/52, no change to oral steroid</td>
</tr>
<tr>
<td>5. Unstable CPU</td>
<td>Topical + oral steroid</td>
<td>PF x6-8/day + Pred 25 or more + I/V Methylpred</td>
</tr>
</tbody>
</table>

Oral immunosuppression stays unchanged prior to surgery
How to prepare for surgery?

Other factors:

Steroid responders - pre-op steroid regime may be modified

Intravitreal triamcinolone 4mg
- CMO active or history
- Heavy flare
- High risk of flare-up

I/V Methylprednisolone 1g
- ? To replace pre-op oral

Steroid regime
What form of surgery?

- **Phako + IOL:**
  - almost all eyes with uveitis if well prepared
- **Phako, no IOL:**
  - severe unstable uveitis of any type; in adult with very heavy flare
- **ECCE + IOL:**
  - phakodonesis, black cataract
- **Anterior approach Vitreolensectomy:**
  - most children with active JIA-related uveitis
- **Pars plana lensectomy:**
  - Widespread anterior PAS
- **Vitrectomy + Phako + IOL:**
  - Vitrectomy necessary, significant cataract
Phako + IOL: Just the usual?
Phako + IOL in uveitis!
Minimise operative trauma

- Expertise with low-trauma pupil opening and use of iris hooks
- Minimise risk of lost CCC/PC rupture
- Efficient, low-energy phako
- Minimise tissue manipulation
- Surgical complications are more problematic in this group; expertise needed to deal with them

- Is this case suitable for a trainee?
IOL material/placement

• MUST be posterior chamber
  – endocapsular by preference
    • Sulcus IOL – chronic iris touch
    • AC IOL – UGH!!
    • Stitched pars plana IOL – CMO?

• Silicone IOLs perform poorly, acrylcs well
  – ? Hydrophilic acrylic superior
  – Sharp edge minimises PCO
Additional measures 1

- Intracameral heparin?
  - 10 IU in 500ml irrigating solution

- Complete Healon washout

- Remove any blood clots
  - Fuchs' heterochromic uveitis
  - Division of iris adhesions- bleeding points
  - Iris hook entry sites

- Suture cornea - 10/0 vicryl if:
  - Extensive PS divided
  - Iris hooks used
  - Iris prolapse during surgery
  - All patients under 30
Additional measures 2

- Topical Atropine for cycloplegia
- Subconjunctival dexamethasone or:
  - Intraocular triamcinolone 4mg
  - Intraocular bevacizumab
  - Intravenous methylprednisolone

- Post-op acetazolamide
  - Existing glaucoma
  - Fuchs' heterochromia
  - Dense cataract/high phako power
  - Prolonged surgery
Postoperative management
NPJ method

- Principle: Over-treat, then relax. Don’t under-treat then try and catch up
- Review day 1, 5, 12, then as necessary
- Medication: high risk
  - Gt Preforte hourly, Gt Cyclo QID, oral steroid
- Medication: low risk
  - Gt Maxitrol 2-hourly, Gt Cyclo BD
- Mydriasis - stop quickly if possible
- Oral steroids - reduce exponentially when quiet
Postoperative complications

1. Fibrinous uveitis - unusual if pre-operative protocol used
   - Repeated subconj steroid
   - Half-hourly steroid
   - If very severe, use Tissue Plasminogen Activator

2. High IOP - frequent
   - Review 1st day post-op
Postoperative complications

3. Hyphaema
   - Eyes with FHU
   - Combined surgery
   - Iris trauma

4. Cystoid macular oedema – unusual if pre-operative protocol followed
   - Acetazolamide
   - Oral steroid
   - Orbital depot/IVT
Postoperative complications

- 4. Posterior synechiae - chronic uveitis
- 5. IOL entrapment
- 6. Ant capsule phimosis
Postoperative complications

7. Lens cell proliferation
8. Cyclitic membrane – phthisis
   - Should have had vitreolsensectomy!
9. IOL deposits - FHU
Children with JIA-associated uveitis?

- Traditionally – NO IOL !!
- What has changed:
  - Better immunosuppression
  - Better IOLs
  - More specialised surgeons
- What has NOT changed:
  - Blood-ocular barrier breakdown

- Current views: some use an IOL IF –
  - The eye is entirely quiet on or off immunosuppression
  - Adult or teenager with no recent flare-ups
  - ? Do primary posterior capsulorrhexis ? Core vitrectomy
- Our approach is still:
  - NO IOL until demonstrably quiescent, in teenagers or older
Combined phako-trabeculectomy?

- After combined surgery:
  - Poorer IOP control vs trabeculectomy alone
  - Inflammation worse than single surgery
- So – avoid combined surgery if possible
  - But if forced to, always use 2-site surgery
- Trabeculectomy first, cataract second?
  - probably optimal if both operations necessary
- Cataract first, trabeculectomy second?
  - Potential IOP “honeymoon” after cataract surgery, but in uveitis:
    - More likely poorer IOP control
    - Trabeculectomy results poorer in pseudophakes with uveitis
Conclusions

- Young patients (at study or work)
- Complex problems, high expectations
- Prolonged management course BUT:

- Don’t be hurried into surgery; waiting for, and preparing for the correct time makes the difference between a good long-term result, and blindness, so:

- Control inflammation FIRST
- Experienced surgeon ONLY