Cataract Surgery in Uveitis

Euretina London 2014
Nicholas Jones
Royal Eye Hospital
Manchester, UK
Cataract surgery in eyes with uveitis is not routine

- It requires much more pre-operative planning
- It may be technically complex with higher risks of intraocular complications
- The sequelae of intraoperative complications are more profound for this type of patient
- 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

• What is the 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, pupil membrane excision, blood vessels cut, sphincter fibrosis ruptured: 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 (MUC mean age 43):
  – Unilateral presbyopia
  – Long-term prognosis?

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

- Does potential benefit outweigh risk?
- Does patient understand implications?
- Can ophthalmologist see enough to monitor and treat posterior segment?

- Should surgery be deferred (and if so, when will it be reconsidered)?
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

UVEITIS
SECOND EDITION
Nicholas Jones FRC Ophth

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 – before or during surgery?

- 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, acrylics well**
  – ? Hydrophilic acrylic superior
  – Sharp edge minimises PCO (in theory)
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 or:
- Intraocular bevacizumab +/-
- Intravenous methylprednisolone

- Post-op acetazolamide
  - Existing advanced glaucoma
  - Fuchs' heterochromic uveitis
  - 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 Predforte 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 <12.5 μg

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

- 5. Posterior synechiae - chronic uveitis
- 6. IOL entrapment
Postoperative complications

- 7. Ant capsule phimosis/capsule shrinkage
Postoperative complications

8. IOL deposits – almost always FHU
Postoperative complications

- 9. Lens cell proliferation
- 10. Cyclitic membrane – phthisis
  - Should have had vitreolensectomy!
Postoperative complications

11. Late IOL subluxation or dislocation
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
  - Need for long-term safety

- 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
Conclusions

- Young patients (typically at work or study)
- 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