

Cataract surgery in uveitis patients

Cataract formation is a common complication of uveitis, causing up to 40% of vision loss in these patients. Cataract results from inflammation +/- corticosteroid therapy and is usually posterior subcapsular, but a small proportion have a rapid increase in nuclear sclerosis. Any type of uveitis can cause cataract but it is found most often in patients with Fuchs' Heterochromic Cyclitis (FHC). The difference between patients with age-related cataract and uveitis patients is that the latter are usually younger (20-50 years), may have an underlying systemic disease and could be on systemic immunosuppression.

What are the indications for surgery?

These include the patient not seeing enough to undertake activities of daily living, or poor visualisation of the fundus. Do not rush into surgery (unlike an age-related cataract); the patient may be functioning quite well even with a degree of cataract. Conversely, there may be younger patients seeing 6/6 who require surgery, as they are unable to drive from the glare.

The patient also has glaucoma, should cataract surgery be combined with a glaucoma procedure?

No, no, no!

If not, should the patient have the cataract surgery first then the glaucoma procedure or vice versa?

The jury is out as to which should be done first. Consult your glaucoma colleague to get his / her preference.

The patient also has 3+ vitreous haze, an epiretinal membrane and persistent macular oedema, should cataract surgery be combined with a vitrectomy?

Sounds a very sensible plan.

When should I do the surgery?

Obey the unwritten 'rule' of three months of 'no' anterior chamber (AC) cells before undertaking the surgery. Longstanding AC flare (chronic breakdown of the blood-aqueous barrier) may be impossible to completely eradicate, but the more flare pre-op the more potential post-op complications. There is no evidence base for this three-month rule, or for corticosteroid prophylaxis or the choice of intraocular lens in these patients [1].

What happens if I cannot get the eye quiet to do the surgery?

More treatment is necessary. This may require the introduction or escalation of systemic immunosuppression.

What preoperative management would you recommend?

When everything is suitable for surgery then counsel the patient, then counsel the patient! Counselling the patient before surgery cannot be emphasised enough. It is imperative that the patient understands the importance of the timing of surgery, that pre-op treatment is required, that surgery may be more complicated than for a person without uveitis, that there should be strict adherence to the postoperative treatment regime and to ensure attendance at each follow-up visit. Decide with the patient the type of anaesthesia well before the surgery. A sub-Tenon local block is usually the preferred choice as topical anaesthesia may not be appropriate if iris manipulation is required. It is not uncommon for the younger patient to request a general anaesthetic.

Paul Anka wrote the lyrics for a very famous Frank Sinatra song and what follows is strictly doing it :

- G. Dexamethasone 0.1% 6-8x / day start / increase 2/52 prior to surgery (even if the patient is known to have a steroid induced rise in IOP).
- On the day of admission 500mg methylprednisolone IV in 100mls N / Saline over 45-60 minutes (other surgeons would give oral prednisolone prior to surgery instead

of IV methylprednisolone).

- All uveitis patients get the above except a) FHC – get nothing, b) acute anterior uveitis (AAU) patients with no attack for 10+ years and no posterior synechiae (PS) only get G. Dexamethasone 0.1%.
- Previous varicella zoster virus (VZV) anterior uveitis / acute retinal necrosis (ARN) also get aciclovir 400mg tid po (three times a day, orally) two weeks prior to surgery and tail off four weeks after surgery.
- Previous toxoplasma retinochoroiditis also get co-trimoxazole 960mg bd (twice daily) two weeks prior to surgery and tail off four weeks after surgery.

How should I do the surgery?

An accomplished surgeon will not have any problem undertaking cataract surgery on the uveitic eye. Not all uveitic eyes will have stuck down pupils and white cataracts, yet some will. Gentle manipulation of the tissues is essential or it may result in excessive postoperative inflammation. Gently divide any posterior synechiae and even if it appears the pupil may be large enough to perform a capsulorrhexis, have a very low threshold to mechanically enlarge the pupil with iris retractors or a Malyugin ring as the pupil may constrict when starting the phakoemulsification. Where there is a pupillary membrane carefully dissect this off the iris and I tend to use intraocular scissors. I prefer iris retractors and normally use four, although other surgeons prefer five (I always thought the packet contained five retractors in case I dropped one on the floor!). I have little experience using a Malyugin ring but I felt that even the largest ring (7mm) did not enlarge the pupil as much as iris retractors. The capsulorrhexis should be slightly larger than one would normally undertake on a non-uveitic eye.

In the younger patient, where possible try to aspirate the lens and I usually use the epinuclear setting on the phako machine. The trainees are always very impressed when they see zero phako time. Good

cortical clearance is essential as the appearance of hydrated soft lens matter appearing in the eye many years after surgery will come back to haunt you. Removing cells from the remaining anterior capsule can be undertaken. In some eyes a remnant of the posterior subcapsular cataract remains on the posterior capsule. Gentle polishing of the posterior capsule or viscodissection can be tried to remove it but if it is reasonably adherent have common sense and leave it or it could all end in tears. As mentioned previously there is no good evidence base regarding the choice of intraocular lens, but I prefer a large optic (at least 6mm if possible) and a hydrophilic acrylic material as it has good biocompatibility. In a minority of patients, with extensive posterior synechiae, difficulty in getting the eye quiet for surgery and a reasonable amount of flare, I will undertake a peripheral iridectomy at the end of surgery. Even if the pupil sticks down following surgery at least the eye will not go into iris bombé. In the younger patient I may use one x 10/0 vicryl suture to the main wound, probably to reassure me in case there was any trauma in the early postoperative period. In FHC eyes an Amsler's haemorrhage frequently occurs from the angle opposite to where one enters the eye. This normally settles quite quickly and if even if there was obvious blood in the anterior chamber at the end of surgery it is highly uncommon to see it there the following morning. Nevertheless, a large bleed may result in excessive postoperative inflammation and raised intraocular pressure.

What is the postoperative management?

I always bring the patients back the next morning. In patients where there has been excessive iris manipulation, particularly in eyes where control of inflammation was challenging pre-op

then another IV methylprednisolone 500mg pulse may be required. Topical treatment comprises: G. Dexamethasone 0.1% two hourly, G. Chloramphenicol 0.5% qid (four times daily), G. Cyclopentolate 1% nocte (at night)(even in FHC eyes) or bd if extensive intraocular manipulation was required. Clinic appointment within 2/52, then just stop the Chloramphenicol. Review 3-6/52 then very slowly (over months) tail off Dexamethasone (to zero or pre-op dose) and slowly tail off the Cyclopentolate – do not stop or reduce too quickly (even in FHC eyes). Stopping the Dexamethasone too soon, particularly in FHC eyes could lead to giant cell formation on the surface of the optic of the implant.

What are the results of surgery?

Many uveitis patients experience a very good visual outcome following cataract surgery. At one year 85% of eyes had a vision better than 0.3 logMAR or maintained a 3 logMAR-line improvement [2]. Posterior capsular opacification is common, but does not always equate to a corresponding drop in visual acuity. Therefore, I would not rush into a Nd:YAG laser posterior capsulotomy. If the vision drops by a couple of lines and the patient is symptomatic or the fundal view is compromised then laser should be undertaken. I normally wait for a minimum of six months following surgery and have the 'no' AC cell rule for two months prior to laser. I would increase the frequency of the topical corticosteroid for a number of weeks post-laser. Despite apparently adequate prophylactic therapy, uncomplicated surgery and the front of the eye settling well from the surgery some patients will develop postoperative cystoid macular oedema (CMO), particularly if they have a previous history of CMO. This usually

develops four to six weeks post-surgery. This may respond to a sub-Tenon triamcinolone injection.

Conclusion

The surgery is not really the difficult bit – timing of surgery and appropriate pre-and postoperative treatment are the most important. Bearing this in mind most uveitis patients will do well from cataract surgery. This article is more experienced based rather than evidence based and as Paul Anka wrote and Ol' Blue Eyes sang: *"Regrets, I've had a few, but then again, too few to mention, I did what I had to do and saw it through without exemption. I planned each charted course, each careful step along the byway and more, much more than this, I did it my way."*

References

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2. Tomlins PJ, Sivaraj RR, Rauz S, et al. Long-term biocompatibility and visual outcomes of a hydrophilic acrylic intraocular lens in patients with uveitis. *J Cataract Refract Surg* 2014;**40**: 618-25.

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