



Anaesthesia in Cataract Hubs

Introduction

The Getting it Right First Time (GIRFT) programme has supported commissioners in London to work collaboratively with ophthalmic providers and professionals to establish a small number of elective cataract surgery hubs in each ICS. These hubs will help to maintain services during the Covid pandemic and establish consistent high-performance pathways for the longer term. A similar process is now being supported in other NHS regions. This document outlines the agreed anaesthetic processes developed for the London cataract hubs through a number of anaesthetic workshops which took place with the engagement of dedicated ophthalmic anaesthetists, general anaesthetists, and ophthalmologists, in October 2020. We hope this document will help other regions as they seek to drive improvements and efficiencies. This document will be “live” and regularly updated as we learn from experience from the surgical hubs.

How does the cataract hub pathway work?

The cataract hubs provide high volume surgical lists to low dependency patients, with low risk cataracts, in the most efficient and standardised way possible, to improve the overall capacity for surgery across the region. Suitable patients are fully mobile, able to comply with instruction, and have no unmanaged or serious underlying systemic or ophthalmic conditions. Patients are expected to arrive no more than 30 minutes prior to surgery and to leave the day surgery unit within 1 hour of arrival.

To help reduce the number of hospital visits, patients with bilateral cataracts and no other ocular comorbidities should be offered, where suitable, immediate sequential bilateral cataract surgery (ISBCS). This is approved by NICE and the Royal College of Ophthalmologists has guidance around this.

Patients on hub lists with cataracts requiring surgery in both eyes are expected to have been provided with dates for both eyes to be operated. This may be either with immediate sequential bilateral cataract surgery or delayed sequential bilateral cataract surgery. It is expected that most patients will be discharged on the day of surgery to their optometrist for post-operative follow-up and a pan-London commissioned pathway is under development to deliver this.

Where an intraoperative complication occurs, or at surgeon discretion due to other factors, patients can be followed up in the hospital.

Anaesthesia

The surgery will be predominately performed with topical and intracameral anaesthetic alone. It is accepted that subtenons anaesthetic should be available and offered where the patient and surgeon feel necessary. Factors that may influence this decision are related to ability to follow instruction, patient photophobia, discomfort, excessive eye movement or Bell’s reflex, or following a complication. ISBCS cases will require topical anaesthesia to enable patients to be independent immediately post-surgery with no eye padding, and reasonable vision in at least one eye prior to leaving the hospital.



Hubs lists are designed not to have any anaesthetist allocated to the list or in the operating room. Hubs will not perform GA or IV sedation, as this would reduce throughput and delay the patient journey. Hubs will also not be suitable for sharp needle anaesthesia, such as peribulbar, due to the need to cannulate these patients, and the small but increased risk associated with this procedure.

Oral sedation, however, may be possible without an anaesthetist, depending on the dose and hospital set-up. It is felt that there is significant patient variability in response to oral sedation, with rare patients potentially becoming very sedated even with low doses of medication. Thus, for a unit to offer oral sedation, it must have the ability to deal with heavily sedated patients. It is suggested that standalone units would be less suited to offering oral sedation. Oral sedation should only be provided at low dosages, and for anxiolysis only rather than any sedation. Ideally these medications should be taken 1-2 hours pre-operatively and a pathway for this should be in place to minimise the time a patient is expected to be in hospital prior to surgery whilst ensuring the patient is safe and accompanied after taking the oral medication.

Patient Selection and Preoperative Assessment

Careful patient selection and patient preparation are key to the smooth running of cataract hub lists. Patients who require more support, with a more tailor-made or custom approach to their care, are unsuitable for hub lists, and will have a better experience at a non-hub surgical provider.

Below are the criteria for cataract complexity grading, and patient suitability criteria, that has been agreed for London.

| Complexity Grading | Description / Risk Factors | Suitable for Hub? |
|--------------------|--|-------------------|
| 1 | Routine, no risk factors | Yes |
| 2 | <p>≤2 risk factors:</p> <p>Difficult access, deep-set eye, difficulty lying flat, anxious / jumpy patient, poor pupil dilation (no hooks/ring required), tamsulosin (alpha blockers), dense or mature cataract, shallow anterior chamber, <u>vitrectomised eye</u>, high myopia or high hypermetropia, >85yrs, guttate, multiple intravitreal injections.</p> | Yes |
| 3 | <p>≥3 of the above, <u>or</u>, any of:</p> <p><u>Pseudoexfoliation</u>, small pupil (requires hooks / ring), <u>very difficult access</u>, severe positional or mobility issues, nystagmus, corneal graft.</p> | No |
| 4 | <p><u>Phacodynesis</u>, 'black cataract', <u>nanophthalmia</u>, posterior polar cataract, previous significant trauma.</p> | No |
| | | |
| Anaesthesia | Topical, <u>Subtenons</u> , Oral sedation (hospital only) | Yes |
| | IV Sedation, General Anaesthesia | No |

Figure 1. Cataract selection criteria

| Hub Screening | | | |
|--|--|-----|-----------------------------------|
| Able to walk 100 yds & get into bed without aid or assistance? | Yes | No | Not Suitable for Cataract Hub |
| Able to lie flat and still for 30 minutes? | Yes | No | |
| OK with being awake (no claustrophobia/GA/IV sedation)? | Yes | No | |
| Best Interest Meeting required? | No | Yes | |
| Requires assistance to access virtual & F2F steps of pathway? | No | Yes | |
| Past Medical History | | | |
| High blood pressure? Ensure controlled prior to surgery / take meds on day | No | Yes | If condition managed OK for Hub |
| Heart attack / Stroke / Angina / Palpitations? Bring angina medications | No | Yes | |
| Diabetes? Type 1 (insulin from diagnosis) or type 2 (diet/tablets at diagnosis). Take usual medications on the day | No | Yes | If Unmanaged not suitable for Hub |
| Asthma / shortness of breath? Bring inhalers on the day | No | Yes | |
| Psychiatric condition / Epilepsy? Consider suitability for LA surgery | No | Yes | If Uncertain consult medical team |
| Other significant health conditions / pregnancy / infections? | No | Yes | |
| Medication? Document on EPR | No | Yes | Document on EPR |
| Blood thinners / warfarin (INR <u>range: _____</u>)? Keep INR within normal range. Need blood test prior to isolation pre-surgery, and bring yellow book on day of surgery | No | Yes | |
| Allergies? Document. If severe latex allergy highlight | No | Yes | |
| Ocular History | | | |
| Eye Drops? Continue afterwards, use fresh bottle. | No | Yes | Document on EPR |
| Previous / LASIK / laser eye surgery for glasses? If yes, please bring all documentation/ prescription from prior to LASIK and tell doctor on the day | No | Yes | |
| Contact lenses? Prior to clinic do not wear soft CL 2 days & hard CL 2 weeks. Can wear again after appointment up <u>to day</u> of surgery. Bring distance glasses to clinic | No | Yes | |
| Alpha Blockers? Tamsulosin/Doxazosin/Alfuzosin/Terazosin in the past? | No | Yes | |
| Who will take patient to/from clinic & surgery? <u>Can not</u> drive themselves or use public transport. Transport arranged if required. Clarify who needs to isolate | | | |
| Who will instil pre-op dilating drops on day of surgery, and post-operative drops for 3-4 weeks after surgery? | | | |
| Unsuitable examples – ASA IV | | | |
| Severe systemic disease that is a constant threat to life | Recent (<3 mths) MI, CVA, TIA, or cardiac stents, ongoing cardiac ischemia (unstable angina) or severe valve dysfunction, severe heart failure, sepsis, disseminated intravascular coagulation, renal failure with no regular dialysis | | NOT suitable for Cataract Hub |

Figure 2. Patient selection criteria and medical screening.

Due to the selected patient cohort, the nature of the procedure, and the short duration of time in a hospital setting, a limited pre-operative assessment can be undertaken. No pre-operative blood tests or ECG need to be conducted, and no medication needs to be altered or stopped. There must, however, be careful documentation of the patient's medication, allergies, and underlying health conditions pertinent to patient safety. The American Society of Anaesthesiologists (ASA) physical status classification system is widely used to assess risk worldwide. ASA I, II, and III patients are all suitable for cataract hubs as long as their condition is stable and managed. Examples are given above of ASA IV conditions that would be unsuitable for a cataract hub.

The above POA guide can be used to assess patients either virtually, over the phone, or face to face. The guide also gives useful pre-operative and post-operative advice.

Of particular note is that anticoagulants should not be stopped prior to surgery. Many modern anticoagulants do not have a measurable therapeutic levels anyway. For those on warfarin, as long as the POA team have reasonable evidence from the yellow book that the INR is likely to be within its therapeutic range for the condition being treated, no extra measurement of the INR is required.

As per AAGBI & British Hypertension Society guidance, blood pressure measurement should be taken prior to the day of surgery. If the blood pressure is elevated but not above 180/110, patients should be advised to see their GP, but surgery should not be delayed. If the systolic or diastolic blood pressure is higher than the recommended level of 180/110, then patients should be referred rapidly to their GP, and surgery delayed until this is managed. Patients should not be discharged.

On the day of surgery

On the day of surgery there should be an assessment of whether the health, medications, or allergies of the patient has changed since their pre-assessment. The pre-operative assessment does not need a specific time cut off for validity of the assessment if this measure is in place.

On-the-day measurements of blood pressure are often a reflection of patient anxiety and not a true measure of blood pressure or risk. As long as the patient has a blood pressure recorded at pre-assessment and/or confirmed by their GP to be within the safe level, then this does not need repeating on the day of surgery.

Blood sugar measurements (BM) likewise do not need testing on-the-day of surgery unless the patient is feeling unwell. This should trigger BM measurement that would guide further management aimed at preventing cancellation wherever possible.

- If the blood sugar is less than 4mmol/l then patients should be offered something sweet with the aim to proceed with surgery when the BM is normal.
- A high BM on the day of surgery should not result in the cancellation of surgery unless there are concerns about hyperosmolar hyperglycaemic state (levels often over 33mmol/l) or ketoacidosis (BM greater than 13.9mmol/l with elevated ketones in blood or urine).

INR, as previously stated, does not need to be checked on the day, as long as there is evidence that their anticoagulation is likely to be within its normal therapeutic range.

Monitoring of the patient

Typically, cataract surgery takes 10-20 minutes, although in the event of complications, may take much longer. During this time there should be someone to monitor the patient when needed without creating an additional member of staff who is not needed for the majority of cases. To support the patient, minimise handovers and maintain patient safety whilst also maintaining the flow of the list, this member of staff can also be responsible for greeting the patient on arrival to the hub, taking them into theatre and discharging the patient after surgery.



Emergency situations

In cataract hubs, despite the pre-selection of low dependency patients, there is always the risk of cardiac arrest or the patient becoming acutely unwell, either precipitated by the events on the day, or by chance. Systems must therefore be in place to manage this risk. All units are expected to have a crash trolley with full cardiac arrest facilities in the theatre complex. Arrest trolleys are to be regularly maintained as per Resuscitation Council UK quality standards guidance. All units are expected to have resuscitation trained individuals, to at least ILS standard, in the theatre complex. For stand-alone units, that do not have the back-up of medical and anaesthetic support on-hand, there must be an ALS trained individual in theatre (other than the surgeon) that can deal with the emergency.

Useful Documents

ASA Physical Status Classification System, American Society of Anaesthesiologists.
www.asahq.org/standards-and-guidelines/asa-physical-status-classification-system

RCOA Guidelines for the Provision of Ophthalmic Anaesthesia Services 2020.
www.rcoa.ac.uk/gpas/chapter-13

Ophthalmology Service Guidance Theatre facilities and equipment February 2018.
www.rcophth.ac.uk/wp-content/uploads/2018/12/Theatre-facilities-equipment.pdf

Local anaesthesia for ophthalmic surgery Joint guidelines from the Royal College of Anaesthetists and the Royal College of Ophthalmologists 2012.

www.rcophth.ac.uk/wp-content/uploads/2014/12/2012-SCI-247-Local-Anaesthesia-in-Ophthalmic-Surgery-2012.pdf

Resuscitation Council UK Quality standards

www.resus.org.uk/library/quality-standards-cpr/acute-care-equipment-and-drug-lists

NICE Hypertension in adults: diagnosis and management

www.nice.org.uk/guidance/ng136

Hartle A, McCormack T, Carlisle J et al. The measurement of adult blood pressure and management of hypertension before elective surgery: joint guidelines from the AAGBI and the British Hypertension Society. *Anaesthesia* 2016; 71: 326–37

www.ncbi.nlm.nih.gov/pmc/articles/PMC5066735/pdf/ANAE-71-326.pdf