

How to Improve the Outcome of Cataract Surgery

**Colin Cook MBChB
FCS(Ophth)SA FRCOphth**
*KwaZulu-Natal Blindness
Prevention Programme*
PO Box 899
Hilton 3245
South Africa

What are the Reasons for Poor Outcome Following Cataract Surgery?

There are 4 reasons for poor outcome following cataract surgery:

1. Case Selection ('Selection')

The outcome in eyes with significant other pathology is likely to be poor. Diseases such as chronic glaucoma, age-related macular degeneration and diabetic retinopathy may be present with age-related cataract, and will result in a poor outcome following cataract surgery.

2. Surgical Complications ('Surgery')

Poor surgery with intraoperative complications is likely to result in a poor outcome.

3. Uncorrected Refractive Error ('Spectacles')

Significant astigmatism or uncorrected ametropia following cataract surgery will result in a poor outcome.

4. Post-operative Complications ('Sequelae')

These complications may be early or late. Persistent inflammation in the early post-operative period and posterior capsule opacification in the late post-operative period may result in a poor outcome.

What Can We Do About It?

1. Case Selection

(1) All patients should have a thorough examination before surgery, to exclude significant other pathology. A common misdiagnosis in African patients is to diagnose cataract as the cause of poor vision in a patient with advanced glaucoma and nuclear sclerosis or insignificant lens opacity, and in Caucasian and Asian patients to diagnose cataract in a patient with age-

related macular degeneration and nuclear sclerosis or insignificant lens opacity.

- (2) In patients with significant lens opacity precluding a view of the retina, it may not be possible to diagnose retinal pathology pre-operatively.
- (3) If we detect or suspect significant other pathology, it is important that our patients are informed about the risk or probability of a poor outcome following surgery.
- (4) It would be good to operate on eyes with no other pathology. However, cataract surgery often needs to be carried out on eyes that have significant other pathology and will have a poor outcome as a result. Ideally, we would like the secondary level district surgery centres to offer surgery for 'uncomplicated' cataract ('white blindness') that is likely to have a good outcome. Patients with cataract who also have significant other pathology that is likely to result in a poor outcome ('black blindness') would best be referred to a tertiary centre for their surgery. District surgery centres would then develop a positive reputation for sight restoration for patients with 'white blindness'. This 'blindness apartheid' – separating the cases of 'white blindness' from the cases of 'black blindness' – should have a positive marketing impact on the uptake of the cataract surgical services in the district surgery centres.

2. Surgery

- (1) Cataract surgeons working in our programmes should have opportunity for adequate supervised training. Whilst there will be considerable individual variation, a recommendation for the minimum requirements for training is 6 months and 100 uncomplicated, unassisted surgeries.
- (2) Cataract surgeons should do the type of surgery that they are most comfortable with and most skilled to do.
- (3) They should be adequately equipped with the instruments and consumables that they require.
- (4) Most importantly, all surgeons should monitor the outcome of the surgery in all their patients. Whatever surgical technique they use, monitoring of the

visual outcome of their surgery is guaranteed to improve the outcome of their surgery. This monitoring should be for each surgeon to compare 'themselves with themselves' over time. It should not be used to compare one surgeon with another or one institution with another. As individual surgeons, we have been concerned with the numbers (quantity) of our cataract surgery. We need to be equally concerned and also prioritise the outcome (quality) of our surgery.

3. Uncorrected Refractive Error

- (1) The quality of aphakic vision corrected with aphakic glasses is inferior to that of pseudophakic vision corrected with an intraocular lens. Uncorrected aphakia from lost or broken aphakic glasses is an important cause of low vision or blindness following cataract surgery. The transition from intracapsular cataract extraction with aphakic spectacle correction to extracapsular cataract extraction with intraocular lens implantation has been and is a most significant factor in the improvement of the outcome of cataract surgery. Wherever possible, this transition should be encouraged.
- (2) Whilst the implantation of a standard power intraocular lens is acceptable practice in some field situations, biometry and the implantation of a customised intraocular lens power will effect a further improvement in visual outcome.
- (3) Most important, however, is good initial wound closure and the appropriate removal of sutures to reduce residual significant astigmatism and for spectacle correction of residual refractive error 8 weeks after surgery.

4. Post-operative Complications

- (1) Wherever possible, careful post-operative follow-up with early detection and treatment of post-operative complications will allow a further improvement in outcome. Routine follow-up after 2 weeks and 8 weeks is recommended.
- (2) An important cause of poor outcome is prolonged untreated post-operative inflammation. If post-operative follow-up is likely to be inadequate, consideration should be given to the administration of a subconjunctival depo steroid injection at the end of surgery.
- (3) Posterior capsule opacification is an

important cause of poor outcome following extracapsular cataract extraction. This risk can be minimised with careful and thorough cortical clean-up during surgery. Either surgical or YAG laser capsulotomy is required for those cases with visually significant posterior capsule opacification after 6 months.

- (4) Late complications may include retinal detachment or the possible worsening of 'incidental' problems such as age-related macular degeneration and diabetic retinopathy.

Summary

1. Poor outcome may be due to 'selection' (other pathology), 'surgery' (intra-operative complications), 'spectacles' (uncorrected refractive error), or 'sequelae' (post-operative complications).
2. To improve the outcome of our cataract surgery the following should apply:

Individual cataract surgeons must:

- Monitor their intra-operative complications and the visual outcome of their surgery. This is good practice that is guaranteed to improve surgery results!

Programme managers must:

- Facilitate a transition from intracapsular cataract extraction with aphakic spectacle correction to extracapsular cataract extraction with intraocular lens implantation
- Ensure adequate training of cataract surgeons
- Ensure the provision of adequate instrumentation and surgical consumables required
- Ensure that all cataract surgeons are monitoring the outcome of their surgery.

☆ ☆ ☆

REPAIR & RECONSTRUCTION

A Journal for Injury, Deformity and Disease

This new Journal has as its first theme: **Burn Injury**. Articles are included on epidemiology, prevention, fluid resuscitation, management, nursing care, anaesthesia, grafting and physiotherapy. The Journal is presently distributed FREE of any charge. This is a twice yearly publication of the **International Community Trust for Health and Educational Services (ICTHES)**.

Contact address:

D D Murray McGavin
MD FRCS(Ed)
Editorial Consultant
ICTHES
106/110 Watney Street
London E1 2QE, UK

Surgery

Surgical Techniques for a Good Outcome in Cataract Surgery: Personal Perspectives

Ravi Thomas MD
Thomas Kuriakose
FRCSEd DNB
Schell Eye Hospital
(Christian Medical College)
Arni Road
Vellore 632001
India

The mandate of this article is to provide practical examples of how to achieve safe, good quality cataract surgery with different surgical techniques.

Cataract Outcomes and Case Selection

In India, increasing pressure to clear cataract backlogs has placed emphasis on number only. If outcomes and quality are ignored, we not only convert curable blindness to incurable but also create adverse publicity for our programme. Case selection is an important issue. In this context, it is important to appreciate that a torch light examination alone may not be sufficient to detect pre-existing pathology (e.g., glaucoma or macular degeneration) that can contribute to poor visual results. Signs, such as mild subluxation of the lens, detected on a

slit lamp can result in a change of surgical plan from ECCE to ICCE.

Complications

Wound related problems, endothelial damage, vitreous loss and post-operative infections are the common factors that contribute to poor outcomes in any type of cataract surgery. Good surgical technique and appropriate management of complications can help minimise these.

Anaesthesia

A soft, well anaesthetised eye is vital to the success of intracapsular (ICCE) and standard extracapsular cataract surgery (ECCE). Use of hyaluronidase and intermittent digital pressure (released every 30 seconds) spreads the anaesthetic and reduces the vitreous volume for safe surgery. Though the modern small incision cataract surgery (both phacoemulsification and manual) can be performed under topi-

cal anaesthesia, peribulbar injections may be more suited for the average surgeon.

Lighting and Magnification

Good lighting and magnification improves visibility and is required even for ICCE. A good microscope fulfils these two requirements. Wound construction, recognition and management of problems like residual cortex, posterior capsule rupture, vitreous



Fig 1: The anterior chamber maintainer (ACM). The metallic end goes into the eye through a paracentesis. The other end is connected to the infusion bottle using an IV line. The packet shows the make and catalogue number.

Photo: Ravi Thomas, Thomas Kuriakose