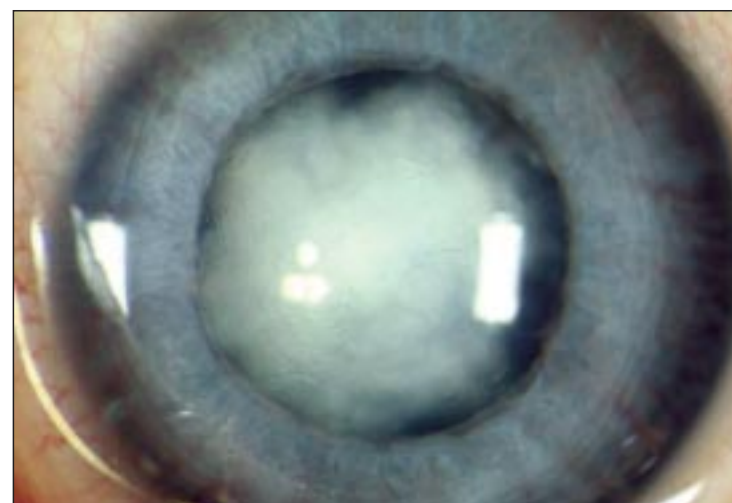
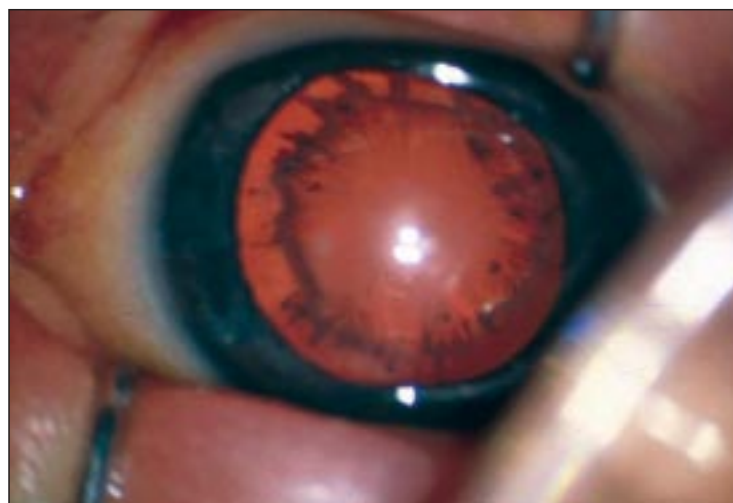


New surgical advances tackle age-old problem in young eyes



Charlotta Zetterström



Courtesy of Charlotta Zetterström MD PhD

Different density of cataract in one week old children. On the left, no surgery, control. On the right, surgery.

Dermot McGrath in Lisbon

THE management of paediatric cataract remains one of the most problematic and controversial issues facing ophthalmic surgeons, but advances in IOL technology and surgical techniques have greatly improved the long-term prognosis for such patients, according to Charlotta Zetterström MD PhD.

Dr Zetterström, St. Erik's Eye Hospital in Stockholm, Sweden discussed the optimal IOL choice and surgical technique in paediatric cataract patients at the XXIII Congress of the ESCRS. She notes that when and how to perform the surgery are the key issues for achieving optimal results.

"The first key point is to assess the density of the cataract. If the cataract is dense then you really have to do the surgery quickly. Also if the child is newborn or a few weeks old, the intervention has to be even quicker. And that is because younger children will develop amblyopia much faster than older children."

Dr Zetterström said that consideration of whether the child is affected in one or both eyes also has to be taken into account in deciding the best time to operate. It is important to consider if it is a unilateral or bilateral case. For a unilateral cataract, there is also the possibility of active suppression from the non-affected eye and

this means even earlier surgery than for a bilateral case. In bilateral cases there is, of course, the problem of amblyopia but without suppression from the other eye, she noted.

Age is also a key factor in the development of chronic glaucoma as a post-operative complication of paediatric cataract surgery, added Dr Zetterström.

"Previous studies have found that between 30% to 40% of children operated on before two months of age will develop secondary glaucoma during their lifetime. This is the most sight-threatening complication. We have observed that performing IOL implantation in newborns will actually result in less secondary glaucoma," she said.

Dr Zetterström reports that small eyes and those with persistent foetal vasculature are at greater risk of developing secondary glaucoma after paediatric cataract surgery.

Differing views on timing and IOL calculation

Turning to the controversial question of IOL implantation, Dr Zetterström said that there is still a lot of debate about the safety and optimal timing of putting intraocular lenses into young eyes.

"My view is that over the age of one year, bilateral implantation is accepted and totally safe. In cases of unilateral dense

congenital cataract, there are a lot of different approaches. I perform implantation in one- or two-week old children if it is a unilateral case using the single-piece Acrysof IOL (Alcon) with the yellow filter. I don't think it is a good idea to implant multifocal lenses in the growing eye because we do not know what refraction the child will end up with."

In terms of calculating IOL power in paediatric patients, Dr Zetterström said that there are two options for unilateral cases. The first option is to aim for emmetropia at the time of surgery, or you can wait until the child is an adult and then put an additional contact lens on that child to achieve emmetropia.

"A one-month-old child will perhaps have hyperopia of +9.0 D or +10.0 D when you are calculating for emmetropia as an adult. In the bilateral cases I think it is best to aim for emmetropia when the child becomes an adult."

The importance of surgical technique in treating paediatric cataract cannot be understated, according to Dr Zetterström, who offered some tips to obtain the best possible outcomes.

Special care required with capsulorhexis

She advised that anterior and posterior capsulorhexis should be performed on all paediatric cataract patients and that the

IOL should be placed in the capsular bag. An anterior vitrectomy should also be performed in young children of preschool age.

Discussing the technique in more detail, Dr Zetterström said that the anterior capsulorhexis should be round and without tears. She noted that it is almost always possible to aspirate both the nucleus and the cortex in paediatric patients.

"I use Aqualase (Alcon) in children and it works nicely. I then place ophthalmic viscosurgical device (OVD) in the bag, followed by a round, well-centred posterior rhexis, which is usually a bit smaller than the anterior one and also without any tears. I then open the capsular bag with OVD and put the lens in place within the bag. Then at the end, I perform the anterior vitrectomy with the OVD in the anterior chamber to maintain stability. I then centre the lens and make sure that there is no vitreous close to the pupil," she said.

Lens epithelial cell regrowth is one of the more serious complications associated with IOL implantation in children younger than one year at the time of surgery, said Dr Zetterström.

"Lens epithelial cells will grow on the anterior vitreous surface if not removed. But even if the anterior part of the vitreous has

been removed, cells can grow both on the anterior and posterior surface of the IOL," she said.

Summing up the advantages of IOL implantation in young children, Dr Zetterström cited three main benefits.

"The most important I think is hopefully the decreased incidence of secondary glaucoma. There is also better compliance from the patient because there is no need to use contact lenses and finally it is reassuring to know that the IOL is firmly placed in the capsular bag," she said.

Looking to the future, Dr Zetterström said that the most important factor in treating children younger than two months is to get a completely clean capsular bag.

"This is probably because the lens epithelial cells are important both for posterior capsule opacification and secondary glaucoma. It is possible to clean the bag completely. It would then be wonderful to have a really small lens for these small eyes as all the IOLs on the market now are not custom-made for newborn eyes."

charlotta.zetterstrom@sankterik.se