



香港眼科醫學院

High-quality cataract surgery

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Over the past 50 years, cataract surgery has evolved from intracapsular lens extraction to extracapsular lens extraction to phacoemulsification. In Hong Kong, phacoemulsification by ultrasound has been a standard procedure for nearly 20 years. So what will ophthalmologists and patients be looking for with regard to cataract surgery in Hong Kong? Everybody realizes that these days the age of the cataract patient is getting younger. It is not that Hong Kong people are suffering from cataract at an earlier age, rather it is the demand for better vision from patients is much greater and our doctors are more confident to help them to achieve their target vision. Cataract surgery is not just a simple lens exchange using phacoemulsification. Quality surgery begins with communication to deal with the patient's demand for desirable vision in the context of his / her lifestyle. Examples of such lifestyle issues include the extent of anticipated computer usage, the desirability to read without glasses, the capability to drive, and to see a golf ball from over 200 yards even at twilight.

The communication begins with a good history and the meticulous retrieval of different forms of relevant data obtained by resorting to sophisticated instruments. The latter are used to measure the anterior and posterior topography of the cornea, to determine the axial length of the eye by scanning devices after accurate positioning of the crystalline lens, and to undertake endothelial cell counts and posterior optical coherence tomography to evaluate the health of the macula and optic nerve. With all this information, the doctor can make an accurate estimate of the operative result so as to discuss what the patient can reasonably expect. After such discussion, the doctor can begin to choose the type of lens for any given patient. This implies the need for familiarity with the effect of the chosen lens with his or her own normogram to deliver an accurate result. Now comes the question as to whether we should use laser-assisted phacoemulsification or not. The published literature on this issue has yielded very different opinions as to whether it can affect the final result.

My personal experience tells me that even it is marginally better with laser phacoemulsification, it will become the standard procedure in the future especially for patients

using a premium lens. The size of the continuous curvilinear capsulorhexis (CCC) is important and is not universal with all lenses, e.g. a bigger CCC is needed for the Zeiss lens and a smaller one for the ReSTOR lens. It is this little bit of precision which makes the centering and vertex distance positioning more perfect with less tilting for premium lenses, as we all know these details are of utmost importance for these lenses to perform. Results will be definitely more consistent in an institution in which different doctors undertake the same procedure. Consistency of corneal incision and accurate astigmatic keratotomy can also help the surgeon's normogram by reducing both existing or induced corneal astigmatism.

Cataract surgery in Hong Kong has evolved from sight restoration to sight improvement. Volume hypermature cataracts will no longer exist even in the government sector. Quality surgery will be in demand and can only be accomplished by careful planning, obtaining detailed informed patient consent, making the right choices about lens power and type, and the skill to use the most up-to-date instruments with proper follow-up. Can I speculate on what future cataract surgery will look like? In the near future, I believe all measurements such as corneal topography, A-scan, and endothelial cell count will be exported into a "laserphaco machine". Moreover, the surgeon will be able to verify and see the results through the microscope, throughout surgery by linking them altogether through the computer to provide the end power and postulated results on the table at the end of surgery.

There should also be improvements in lens design. The present aspheric lens assumes that all corneas have the same asphericity and adopt a standard Q to complement the corneal Q value. We know, however, that corneal topography varies between individuals and tailoring lenses to individuals based on individual corneal topography could neutralize spherical and other forms of aberration to enable a perfect image to fall on the retina.

In conclusion, I think we should not be led by technology and the companies that develop them, but should conduct research into creating the technological advances which will help our patients attain more perfect vision.