**Symposium Report**

Where anterior segment and posterior segment surgery meet

Retina

Dr. Peter Barry, FRCS, Dublin, Ireland, discussed strategies for dealing with the dropped lens.

"I think all of us have had the experience of dropping a nucleus whilst performing cataract surgery. You all know the sense of despair; you panic and feel somewhat embarrassed. You hope that nobody will really notice what’s happening. But then you actually realise that you’ve made a mistake, you’ve got a problem, and you have to face up to it.”

Possible consequences of such events include corneal failure, uveitis, glaucoma, vitritis, cystoid macular oedema, and retinal detachment. The challenge for the surgeon is to avoid those complications and remove the dropped lens and implant an IOI L in the capsular bag, Dr. Barry said.

Experienced cataract surgeons can achieve this by first performing a closed anterior vitrectomy, aspirating the soft lens material while at the same time being very careful to preserve capsular remnants.

“Less experienced surgeons are sometimes in a hurry to complete this part of the procedure but it should really be the other way around: slow down, do your anterior vitrectomy and tease out the residual lens cortex with very low infusion and ensure that you preserve the capsular bag remnants in order to achieve lens implantation.”

Vitreoretinal surgeons can use the alternative technique of pars plana vitrectomy, again aspirating the soft lens material, using a fragmatome in denser cataracts. The use of viscoelastics should be avoided with this approach because it is difficult to remove following vitrectomy.

With both approaches a posterior chamber IOL can usually be successfully implanted although sometimes it will need to be implanted in the sulcus, Dr. Barry added.

**Effects of cataract surgery on the macula**

Conceição Lobo MD, Coimbra, Portugal discussed the effects of cataract surgery on the macula. She noted that angiographic CME occurs in about 20% of eyes undergoing such procedures, although it becomes symptomatic in only around 1-2%.

Dr. Lobo recommended mapping of the macula with a multimodal approach to characterise the condition’s features and assess treatment in patients in whom it affects vision.

She presented a study in which she and her associates used multimodal macular mapping in 32 patients who had undergone phacoemulsification and IOL implantation. The approach involved a combination and integration of fluorescein angiography, Retinal Leakage Analysis (RLA) Retinal Thickness Analysis (RTA/O CT).

The study showed that leakage reached its maximum at 12 weeks and was present in 88%. Retinal thickness peaked at six weeks, when it was increased in 41%. By 30 weeks leakage was present in only 68% and retinal thickness was increased in only 28%. Visual acuity followed a similar pattern. That is, visual acuity of 8/10 or better was achieved
by 81% at three weeks, 88% at 12 weeks and 91% at 30 weeks.

**Prevention of PCO**

Dr Marie-José Tassignon MD, University Hospital Antwerp, Belgium, followed with a presentation describing the latest results with the bag-in-the-lens IOL. The lens is specifically designed to prevent posterior capsule opacification.

Patients who are to be implanted with the lens first undergo anterior and posterior capsulorhexis, Dr Tassignon explained. The rims of the IOL’s specially designed haptics clasp the edges of the remaining capsular bag together. In this way the lens prevents lens epithelial cell migration and PCO. In addition, the anterior and posterior haptics are oriented perpendicularly to each other in order to prevent the tilting, rotation or decentration of the lens.

Dr Tassignon has implanted the IOLs in over 600 eyes, 25 of which were paediatric cases. She noted that in all eyes with a follow-up of at least one year the optic portion of the lens has remained clear and none have required a YAG capsulotomy.

Furthermore, in a study which compared the results of implantation of the bag-in-the-lens IOL in 100 patients and 100 patients implanted with a conventional IOL made of the same hydrophilic acrylic material, none of the eyes with the bag-in-the-lens IOL required YAG laser capsulotomy after a follow-up of four years, compared to YAG capsulotomy rate of 41.18% in the conventional IOL group.

“The results make it 100% clear that with the bag-in-the-lens IOL you have no PCO whatsoever.”

To further optimise the placement of the IOL, Dr Tassignon has designed a ring-shaped calliper to guide the surgeon in the creation of the anterior capsulorhexis. The more precise centration and sizing of the capsulorhexis that the device affords may in turn improve the stability of the IOL.

“When IOL rotation and centration is under control spherical aberration and toric correction can be introduced,” she added.

A version of the lens in which the optic can be exchanged in subsequent procedures is now under development. The new lens could be of particular benefit to paediatric patients.

Future modifications of the lens may make it possible for patients to achieve a degree of accommodation, Dr Tassignon said.

**Treatment of endophthalmitis**

William F Mieler MD, University of Chicago, Chicago, Illinois, US, discussed the current thinking on the treatment of endophthalmitis. “This field is rapidly changing and there are many questions that remain unanswered at this point in time as to our true best management. We like to recommend treatment based on evidence-based medicine but in some cases we don’t have all the answers.”

He noted that the Endophthalmitis Vitrectomy Study (EVS) showed that vitreous tap and vitrectomy had equivalent results when the affected patient had hand movements or better. If the patient’s vision is light perception or better vitrectomy produces better results.

The EVS also showed that intravitreal antibiotics such as vancomycin and amikacin were effective in bringing about a resolution of the condition. Another finding was that the systemic intravenous antibiotics used in the study (cephalosporins and aminoglycosides) produced no apparent benefit.

However, recent studies suggest that newer, fourth generation fluoroquinolones such as gatifloxacin and moxifloxacin may be effective in the treatment of endophthalmitis when administered orally, Dr Mieler pointed out.

“These are agents that penetrate inside the eye very readily when given orally even in non-inflamed eyes,” he added.

In a study involving patients undergoing elective vitrectomy, oral administration of gatifloxacin achieved a maximum vitreous penetration that exceeded the MIC90 for all the Gram-positive microorganisms except enterococcus. The agent also achieved the MIC90 levels for most of the Gram-negative organisms except pseudomonas.

Gatifloxacin was recently withdrawn from the market as an oral agent due to its adverse effect on blood-sugar control. However, it is still available for topical use as eye drops.

Moxifloxacin, which is still on the market for oral use, provides an even better spectrum of control and achieves a concentration in the vitreous cavity that is 38% of that of serum concentration. In addition the agent appears to be safe in the eye at concentrations 500 times as high as the MIC90 for the most commonly encountered microorganisms.

“Exciting significant advances have been made in the treatment of proven infection, and in the prophylaxis against development of infection. Numerous additional changes are forthcoming,” he commented.

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