IOL EXPLANT SURVEY
Dislocation and decentration remain most common cause of IOL explantation

by Dermot McGrath in Milan

The most common complications involving foldable IOLs have changed little over the past five years and may continue to be avoided by excellent surgical technique, quality manufacturing, careful IOL folding and insertion and accurate IOL measurements, according to Nick Mamalis MD.

“To avoid some of the main complications using foldable IOLs we need rigorous surgical technique, with an intact capsulorhexis and capsular bag fixation of the IOL. This will markedly help to decrease the incidence of dislocation and decentration that remain the most common cause of the explantation of foldable IOLs,” said Dr Mamalis.

Presenting the results of the 14th ESCRs/ASCRS annual survey on foldable IOLs requiring explantation or secondary intervention, Dr Mamalis, professor of ophthalmology, Moran Eye Center, University of Utah, Salt Lake City, US, said that the goal of the survey, written in conjunction with members of the ASCRS Cataract Clinical Committee, was not to single out individual IOLs as being either superior or inferior to other lenses.

“It is difficult to get a clear picture of what IOL causes what complication because we only report on the lenses that were either sent to us or for which the survey form was filled out, so we really do not know the total numerator or the denominator of the lenses that are being implanted. Our study therefore focuses on looking at which type of complications are occurring with which type of lens, and also to determine if some complications are now appearing more frequently or less frequently over time,” he said.

The questionnaire on which the study was based includes details of the type of IOL removed, the patient’s preoperative visual acuity and the symptoms requiring removal of the lens.

The IOLs covered by the survey included one-piece plate-type lenses, one-piece IOLs with haptics, and three-piece IOLs. The joint ESCRs/ASCRS survey also includes multifocal and accommodating lenses which have become more popular in recent years, said Dr Mamalis. The survey also takes account of IOL material type including silicone, hydrophobic acrylic, hydrophilic acrylic (hydrogel) and collamer, a hybrid material.

Discentration or dislocation was the primary problem associated with the removal or adjustment of one-piece plate-type silicone lenses, accounting for almost 70 per cent of explantations in that category of IOL, followed by incorrect lens power in 52 per cent of cases.

Dislocation or decentration was also the most common reason for explantation of three-piece silicone foldable IOLs, although other factors such as incorrect lens power, optical aberrations, iritis and glaucoma were also implicated in the survey, said Dr Mamalis.

The same pattern emerged for one-piece hydrophobic acrylic lenses with haptics, with dislocation or decentration again the main cause of explantation in 50 per cent of cases. A similar scenario was reported for three-piece acrylic IOLs, with decentration/dislocation the most commonly cited reason for explantation in half of cases. A different pattern emerged, however, for hydrophilic acrylic lenses, with calcification and opacification cited as the principal reasons for explanting these IOLs.

In the multifocal IOL category, glare and optical aberrations (over 60 per cent) were the most commonly cited reason for removal of hydrophobic acrylic one-piece multifocal IOLs with haptics. For three-piece hydrophobic acrylic multifocal IOLs, incorrect lens power was the reason for IOL removal in 50 per cent of the explantations, said Dr Mamalis.

“We are seeing an increasing number of explanted multifocal IOLs. This may simply relate to the fact that more of these lenses are being implanted now than was the case previously, but we are definitely seeing more in our survey,” he said.

For one-piece silicone accommodating lenses, Dr Mamalis said that glare and optical aberrations were the most common reason for removal, but emphasised that the numbers included in the data were too small to draw any firm conclusions.

Putting the overall study data into context, Dr Mamalis said that with the exception of hydrogel IOLs, dislocation or decentration once again proved the most common reasons for removal of foldable IOLs, followed by glare and optical aberrations and then incorrect lens power.

“Hydrogel or hydrophilic acrylic lenses are now being explanted less frequently which may be related to the fact that these lenses are no longer calcifying. We have also seen a marked reduction in the removal of plate haptic silicone IOLs in recent years, which may reflect a reduction in the overall usage of such IOLs rather than any improvement in their performance per se,” Dr Mamalis said.

The reduction of incorrect IOL power as a reason for lens removal is another clear trend to emerge over the years of the study, said Dr Mamalis.

“Accurate IOL measurements remain important and we are seeing now that the incidence of incorrect lens power has dropped markedly over the course of the survey. I think that is a result of the improvements in IOL calculations and the fact that we are using interferometry for more accurate axial length measurements,” he said.

The high incidence of glare and visual symptoms as the main cause of multifocal IOL explantation also underscored the importance of proper patient selection and preoperative counselling for these patients, Dr Mamalis added.

Dr Mamalis stressed that the ESCRs/ASCRS explantation study was ongoing and depended on the contributions of ophthalmologists and ophthalmic surgeons to stay abreast of emerging trends in a fast-moving field. He encouraged surgeons to report IOL explantations as they occur using the form available via the ESCRs or ASCRS websites.