Better surgical techniques improve cataract surgery outcomes in uveitis

Successful cataract surgery in patients with uveitis depends on excellent preoperative control of inflammation, special surgical techniques, and aggressive postoperative management of inflammation and macular oedema, according to Allan R Rutzen MD, FACS.

"Cataract surgery in patients with uveitis can be particularly challenging but with the right instrumentation and surgical techniques, we can usually deal with these patients successfully," he said.

Addressing delegates attending the 9th Congress of the International Ocular Inflammation Society, Dr Rutzen said that patients with uveitis often develop cataracts, either as a result of intraocular inflammation or the long-term use of topical or systemic corticosteroids.

While the extraction of cataracts in these eyes is more technically difficult, and the risk for postoperative exacerbation of inflammation and macular oedema is increased, there are a number of surgical manoeuvres that can be used to increase the likelihood of a successful outcome, said Dr Rutzen.

"Patients with uveitis frequently have recalcitrant inflammation, posterior synechiae, peripheral anterior synechiae, small pupils, elevated intraocular pressure, and pre-existing macular oedema, so the surgeon must be prepared to deal with these types of problems," he said.

Dr Rutzen said that surgical techniques such as synchliotysis and pupil stretching, sphincterotomies, and the use of iris retention devices may all be used in uveitis patients without provoking too much postoperative inflammation if handled correctly.

Before contemplating performing cataract surgery in a patient with uveitis and a small pupil, Dr Rutzen said that there were several measures that needed to be taken care of first.

"Before embarking on cataract surgery in a patient with a small pupil, the surgeon should determine the minimum pupil size with which he can work. This will depend on the surgeon’s experience, the density of the cataract, the choice of coaxial or microincision cataract surgery and the depth of the anterior chamber.

"It is also essential that the preoperative inflammation be brought under control for at least three months prior to cataract surgery," he said. Such treatment may include oral, intravenous, subconjunctival and even intraocular steroids before, during or after surgery, added Dr Rutzen.

While there are surgical manoeuvres that can be employed to open the pupil during surgery, the goal is to achieve this as gently as possible and to avoid traumatising the iris and generating postoperative inflammation, he said.

"The pupil must be large enough to accomplish the key steps in the surgery. For example, the capsularhexis should be large enough to avoid postoperative capsular constriction. It also has to be large enough to allow for the safe removal of the lens and to facilitate thorough cortical clean up because it is vital not to leave any residual nuclear or cortical material that could lead to postoperative inflammation," he said.

Working with a pupil that is too small in such scenarios can have serious consequences and should be avoided if at all possible, advised Dr Rutzen.

"If the pupil is too small, inadvertent contact with the iris can occur during phacoemulsification and there is also an increased risk of iris prolapse because the irrigation occurring beneath the iris plane can encourage the iris to come up to the incision," he said.

While either standard coaxial phacoemulsification or bimanual microincisional cataract surgery can be used in uveitic patients, Dr Rutzen noted that there are certain advantages to be gained using the latter approach.

"Microincision cataract surgery (MICS) has certain advantages, including smaller instrumentation, and a smooth phaco tip without the need for an irrigation sleeve. This reduces the likelihood of iris chafing with a small pupil. The fluidics with MICS are also excellent and the irrigation can be kept above the iris plane and that will prevent the possibility of iris prolapse," he said.

For pupil stretching, Dr Rutzen said that devices such as a Lester manipulator, collar button or a Kuglen hook may all be used.

"There are many versions of these instruments so be sure to choose one with a relatively smooth tip that is less likely to damage the anterior capsule during stretching manoeuvres. All of these instruments can be used through a larger coaxial phaco incision, but the smaller Kuglen hook is preferable to go through the smaller incisions used in MICS," he said.

Dr Rutzen said it was important to note that posterior synechiae are present not only at the pupillary border but also extend further along the undersurface of the iris.

"Kuglen hooks can be used to stretch the pupil both horizontally and vertically, and this
manoeuvre is typically performed by stretching the iris from limbus to limbus. Viscoelastic can also be used to enlarge the pupil after stretching, or the surgeon might use pupil dilators which simultaneously introduce two or three prongs to stretch the iris," he said. Dr Rutzen said that his own personal preference is to use a Beeler pupil dilator.

"I prefer using this device for dilating the pupil. There is a small hook at the end of the shaft, and advancing prongs emerge from the tip of the instrument and stretch the pupil with contact in two, three or four locations. The dilator can be inserted through a 2.8mm incision, and smaller devices are being designed to fit through microincisions," he said.

While multiple partial-thickness sphincterotomies may also be helpful in dilating the pupil, Dr Rutzen said that he prefers to avoid this approach in the absence of a fibrotic membrane around the pupillary border, since cutting the iris sphincter may actually increase the postoperative inflammation.

Dr Rutzen added that iris hooks and pupil dilating rings are also useful in controlling the iris in this type of surgery. While the optimal lens material is still a subject of some debate, he said that he favours using single-piece, acrylic lenses in patients with uveitis.

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