Iris diaphragm IOLs safe and effective in treating aniridia

Dermot McGrath
in London

THE use of an iris diaphragm intraocular lens (Morcher GmbH) is a safe and effective means of treating patients with post-traumatic or post-surgical partial or total aniridia, according to the authors of a small prospective study presented here.

“It is a small-scale study but we have been impressed with the results obtained using the iris diaphragm IOL implantation technique. It leads to effective visual rehabilitation for these patients and takes care of problems such as glare and photophobia which are a real problem for patients with aniridia,” said Ashfaque Maniyar MD, King Abdul Aziz University Hospital, Jeddah, Saudi Arabia.

Dr Maniyar noted that an intact iris diaphragm is essential for accurate visual function as it decreases aberrations from the crystalline lens and increases the depth of focus. Symptoms of partial or total aniridia range from decreased vision and cosmetic concerns to incapacitating glare and photophobia. He said that various techniques to overcome visual function impairments arising from partial or total aniridia include corneal tattooing, coloured contact lenses, iridoplasty and various anterior and posterior chamber IOLs.

While many of these approaches helped to improve patients’ visual acuity, the problems with glare and photophobia remained an ongoing problem,” he said.

In conjunction with Dr Sundmacher of the University of Düsseldorf, Morcher developed a special intraocular lens in the early 1990s with an integrated iris diaphragm to correct congenital and traumatic forms of aniridia. The first reported use of artificial iris implants were by Sundmacher et al and Reinhard in 1994, where they described using a black diaphragm single-piece IOL in congenital aniridia.

Dr Maniyar’s study included seven patients with a mean age of 44 years. Six of the patients presented with post-traumatic or post-surgical partial aniridia and were implanted with transscleral sulcus fixated iris diaphragm IOLs. One patient received a sulcus-supported iris diaphragm IOL on the capsule remnants. All patients had comprehensive pre-operative clinical evaluations including assessment of best-corrected visual acuity, slit lamp microscopy, and biometry examinations. Patients were also asked to rate the severity of glare on a scale from zero to three.

Six patients had transscleral fixation of the implant and one patient was found during the procedure to have enough anterior capsule in order to enable sulcus fixation of the IOL.

In scleral fixation IOL a straight needle of 10-0 prolene is passed vertically (perpendicular to sclera) 2mm behind the surgical limbus at 3 o’clock position and engaged in the bore of a 27 gauged bent needle introduced 180 degree apart at 9 o’clock position, with the similar technique. Similarly another 10-0 prolene is introduced 2mm vertically apart from the first suture. The two sutures were brought out from the surgical wound and tied to the eyelets of the IOL and the lens was implanted while pulling the two sutures from the side.

With 48 months mean follow-up, Dr Maniyar said that postoperatively all patients had very good visual acuity in the range of 20/30 or 20/20 and all patients reported marked improvements in terms of glare and photophobia. The exception to these favourable outcomes was the patient who had been implanted with the sulcus-supported IOL, who developed anterior uveitis and secondary glaucoma following surgery.

Looking at specific case studies, Dr Maniyar cited the example of a female patient who had undergone complicated cataract extraction with vitreous in the anterior chamber. After vitrectomy and scleral fixation of the IOL, her visual acuity improved from count fingers to 20/25 and her glare rating went from two to down to zero. Another patient with penetrating ocular injury and associated corneal scarring and a fixed dilated pupil, improved from an uncorrected visual acuity of 20/200 pre-operatively to 20/20 postoperatively and his glare score improved from three to zero.

Summing up, Dr Maniyar said that in this small series of patients, the use of iris diaphragm IOLs was found to be safe and effective for the treatment of post-traumatic and post-surgical partial aniridia.

“The single case that had a complication was basically due to the sulcus fixation so we want to emphasise that this lens is designed for scleral fixation, not for sulcus support,” he concluded.

maniyarashfaque@yahoo.com

Ashfaque Maniyar

Iris diaphragm IOLs safe and effective in treating aniridia

maniyarashfaque@yahoo.com

Ocular Update