Sir,

Spontaneous iris sphincter ruptures due to lens–iris diaphragm retropulsion syndrome during phacoemulsification

Cataract surgery, especially extracapsular cataract extraction (ECCE), has been known to be associated with pupillary abnormalities following surgery. Yap *et al.*¹ reported macroscopic and microscopic iris sphincter ruptures in 43.75% and 30.09% of patients respectively as the commonest type of pupillary abnormality following ECCE, while direct iris trauma in 5.3% attributed to direct mechanical damage was the commonest pupillary abnormality during phacoemulsification. Cataract surgery in a highly myopic eye has historically been associated with many unforeseen complications.^{2,3} We describe a hitherto unreported complication of spontaneous multiple iris sphincter ruptures associated with lens–iris diaphragm retropulsion syndrome (LIDRS; a term first described by Wilbrandt *et al.*²) during phacoemulsification in a highly myopic eye.

Case report

A 76-year-old man with a diagnosis of nuclear cataract and high myopia was listed for phacoemulsification and intraocular lens implant surgery in his right eye. Pre-operative refractive error was –10.25 DS/–0.75 DC in the right eye and –8.25 DS–0.1 DC in his left eye, while biometry had revealed axial lengths of 26.56 mm and 26.19 mm respectively. He underwent phacoemulsification surgery in his right eye in February 2000, with the Alcon Legacy 20000 system. Intraoperatively, frequent deepening of the anterior chamber with simultaneous dilatation of the pupil was noted especially with initiation of infusion; this was also associated with significant episodes of retrodisplacement of the lens–iris diaphragm. At the end of the apparently uneventful surgery, the presence of multiple small radial iris sphincter tears was noted in the pupillary margin by the surgeon (Fig. 1). The patient had a very good visual recovery, regaining Snellen 6/5 visual acuity in the operated eye. In addition there were no symptoms

Fig. 1. Post-operative photograph showing multiple iris sphincter tears in the pupil margin.

suggestive of glare and the patient did not report any cosmetic awareness of the defect. Pupil reactions were normal.

Comment

Although pupillary abnormalities are uncommon during phacoemulsification in routine patients, highly myopic eyes as in our patient predispose to LIDRS (a similar entity has been described in previously vitrectomised eyes in the literature^{2,3}). The pathophysiology of LIDRS in highly myopic eyes has been ascribed to zonular laxity, which is thought to be acquired by previous prolonged voluntary disuse of accommodation causing zonular spring exhaustion and/or elongation. The iris sphincter tears can be explained by the physical trauma due to sudden enlargement of the pupil caused by the infusion surge during phacoemulsification compounded by the lax zonules. The traditional method of managing this problem was by a substantial lowering of the infusion bottle height, which unfortunately also caused an undesirable reduction in infusion volume. This problem has been circumvented to some extent by the newer phacoemulsification probes which combine an undersized ultrasonic tip and oversized phacoemulsification sleeve, thereby increasing the infusion volume in spite of lowered bottle heights.^{2,4,5} However, as illustrated by our case, where such a phacoemulsification system was used, present phacoemulsification systems are not entirely infallible in preventing LIDRS and its consequent complications.

References

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Sir,

Retinal toxicity due to Efavirenz

Efavirenz is a non-nucleoside reverse transcriptase inhibitor recently licensed for the treatment of AIDS. The drug has proven efficacy in increasing CD4⁺ counts and