



Figure 2 The petaloid configuration of the retinal haemorrhages resemble the spokes of a wheel in this fluorescein angiogram of the right eye.

with the clinical course of her more superficial retinal hemorrhages.

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Sir, Subluxation of intraocular lens within the capsular bag following a contusion injury

Case report

An 85-year-old healthy man sustained a contusion injury on the left eye by a speedy badminton while playing the game. He had undergone uneventful phacoemulsification with manual continuous circular capsulorhexis (CCC) and implantation of an intraocular lens (IOL) (Alcon[®] MZ30BD, 22.0 D) in the left eye in our hospital more than 5 years ago. The CCC was performed by using a bended 26-gauge needle as described by Gimbel and Neuhann.¹ The IOL was made of PMMA with an optic/overall size of 5.5 mm/12.5 mm. There was no history of laser capsulotomy. According to the patient and the ophthalmologist who examined this patient 3 days after injury, the uncorrected visual acuity was 6/15 OS with 2+ cells in the anterior chamber, the intraocular pressure (IOP) was within normal limit, and the IOL was in good position. After 4 weeks, the patient was referred to us for deteriorating visual acuity and high IOP despite being treated with carteolol hydrochloride 2% and dorzolamide hydrochloride 2%.

On examination, the best-corrected visual acuity was 6/6 OD 2/60 OS and the IOP was 16 mmHg OD 24 mmHg OS. Slit-lamp biomicroscopy showed inferior subluxation of the IOL (Figure 1). Gonioscopy showed widening of the ciliary body from 0300 to 0430 and from 0830 to 1030 clock hours. Fundus examination was unremarkable. Combined surgery of IOL explantation, implantation of a new scleral-fixated IOL and trabeculectomy was then performed. During the surgery, the subluxated IOL within the intact capsular bag spontaneously floated out of the eye upon opening of the limbal wound (Figure 2). The postoperative course was

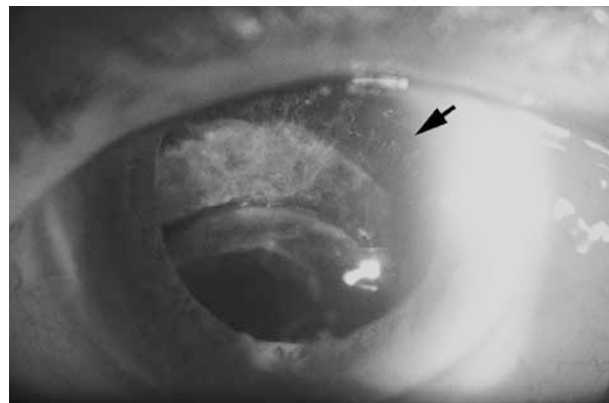


Figure 1 Inferior subluxation of the IOL with the optic's superior edge below the visual axis. Disruption of the superior zonules (arrow) is also noted.

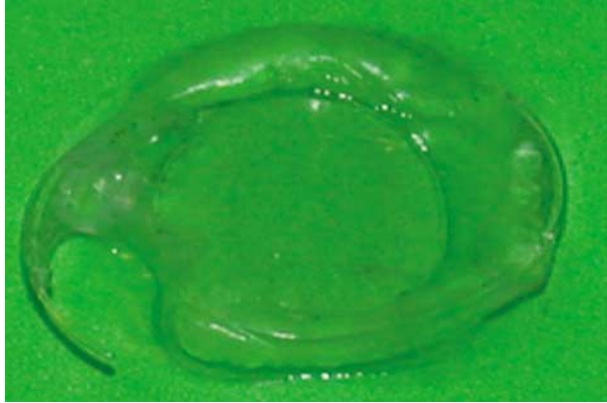


Figure 2 The subluxated capsular bag containing the intraocular lens that spontaneously floated out of the globe upon opening of the limbal wound.

smooth and the medication-free IOP was normalized 2 days following surgery. Best-corrected visual acuity was 6/7.5 and the medication-free IOP was 10 mmHg in the left eye 2 months after surgery.

Discussion

IOL subluxation within the capsular bag after contusion injury has been reported in one eye with a preoperative axial length of 36.58 mm.² A small capsulorhexis was observed in that case, so the authors suggested that capsule fibrosis had probably weakened the zonules that eventually ruptured on trauma. In our case, the eye had a preoperative axial length of 23.60 mm and a large anterior capsulorhexis. It seems that the relatively lightweight IOL was initially held in position by remaining zonules not ruptured on trauma. With ongoing movement of the eye, traction forces of gravity and momentum further weakened the residual zonules that eventually led to subluxation of the capsular bag containing the IOL.

In most contusional injuries of the eye, the anterior segment bears the brunt of both direct and indirect forces. Most tissue damage may be attributed to an equatorial distension of the globe following anteroposterior compression.³ The lens capsule and zonular fibres are elastic that can stretch when an external force is applied.⁴ Assia *et al*⁴ found that the maximal zonular stretch decreases with age by approximately 0.5 mm for every 5 years, whereas capsular elasticity does not show a correlation with age. Before the development of capsulorhexis, one or both haptics often dislocates into the sulcus when a radial capsule tear develops.⁵ CCC ensures good centration of the IOL and offers greater resistance to capsule tearing than diathermy capsulorhexis and vitrectorhexis.⁵⁻⁷ We demonstrate a case of IOL subluxation within the

capsular bag after contusion injury in an eye without pseudoexfoliation, pathological myopia, or strong capsule contraction syndrome. The great capacity of the anterior capsular rim to resist tearing when the globe is hit by a speedy badminton provides clinical support of the important role CCC plays in phacoemulsification. Old age seems to be the only predisposing factor that may have weakened the zonules before the accident occurs.

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