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Sir,

YAG laser capsulotomy, an unusual complication

Eye (2004) **18,** 193–194. doi:10.1038/sj.eye.6700548

Posterior capsule opacification (PCO) is the commonest cause of diminished visual acuity following cataract extraction. Visually significant PCO may occur in up to 25% of patients over a 5-year period.[1]

PCO is readily treated by the use of the neodymium yttrium aluminium garnet (NdYAG) laser to cause photodisruption of the thickened posterior capsule, and thereby clear the visual axis.

We report a patient with an uncommon complication following uneventful NdYAG capsulotomy and describe a potential treatment.

Case report

A 71-year-old Caucasian lady presented 12 months after uncomplicated right cataract surgery with a gradual reduction in vision of the operated eye. On examination, her best-corrected visual acuity was noted to be 6/18 in the right eye, and slit-lamp bimicroscopy revealed PCO. NdYAG laser capsulotomy was performed using a circular pattern of laser treatment. Following treatment, an optically clear visual axis was seen and the patient was commenced on G dexamethosone drops four times a day.

The patient returned to the eye clinic 1 week later complaining of a persistent, large 'floater' in the right eye, which was distressing her. This 'floater' became apparent on moving her eyes in any direction and slowly disappeared on keeping her eyes still. Her best-corrected visual acuity had improved to 6/6, but slit-lamp examination revealed a large freely mobile remnant of her posterior capsule floating within the retrolental space, Figure 1. An attempt to directly disrupt the remnant was made with further NdYAG laser treatment, with the patient moving her eyes until the fragment crossed the visual axis and laser being applied as it did so.

Despite limited success in obliterating the offending fragment, the patient's symptoms completely subsided the following day.

Slit-lamp examination 6 weeks later revealed no evidence of the posterior capsular remnant.

Comment

NdYAG capsulotomy is generally a safe and successful method in relieving the symptoms of posterior capsular opacification. Documented complications include, transient rise in intraocular pressure,[2] retinal detachment,[3] lens subluxation or dislocation,[4] lens pitting,[5] and exacerbation of local endophthalmitis.[6]

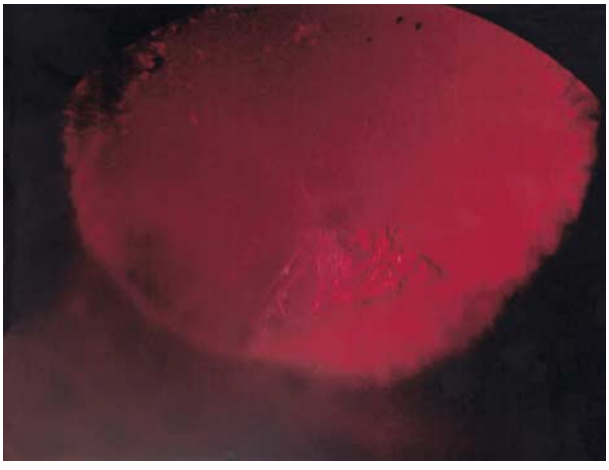

Figure 1 Posterior capsule remnant floating in retrolental space.

Free-floating fragments have previously not been documented.

Several techniques for NdYAG laser delivery have been described.[7] These include cruciate, circular, horseshoe, or spiral delivery. Each technique has its own advantages and disadvantages. Circular application of laser was used in this case, in order to avoid pitting of the lens within the visual axis. However, it was because of this method that probably led to the free-floating remnant, since the other techniques cause contraction of the capsule or lead to the lasered portion 'flopping' out of the visual axis.

NdYAG capsulotomy, in addition to causing photodisruption of the posterior capsule, causes disruption of the anterior vitreous face in about 33% of cases.[8] It is likely that in many cases, where isolated remnants of the posterior capsule remain, these fragments settle into the vitreous cavity. In our case, it is likely that the anterior vitreous face was undisturbed after the initial laser treatment. As a result, the fragment was freely mobile in the retrolental space and unable to move into the vitreous cavity. After the second laser session, despite only minimal damage to the fragment itself, disruption of this anterior hyaloid face may have allowed the fragment to settle into the vitreous cavity and thereby move out of the visual axis.

This case illustrates the aetiology and treatment for one potential complication of circular application of laser in NdYAG capsulotomy.

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There was no proprietary interest in this piece of work.

Sir,

Refractive error following cataract extraction with the implantation of a standard power intraocular lens in a rural African blindness prevention programme
Eye (2004) **18,** 194–195. doi:10.1038/sj.eye.6700549

Age-related cataract accounts for approximately 50% of blindness in Africa, affecting an estimated 3.5 million people.[1] It is common practice in many African blindness prevention programmes to implant a standard power intraocular lens (IOL); however, in developed countries the calculation of the IOL power is now routine ophthalmological practice. We looked at the refractive outcome following the implantation of a standard power lens in Zulu patients.

Methods

A total of 100 patients had intracapsular cataract extraction (ICCE) with implantation of a 17.5D (A constant 114.5) anterior chamber intraocular lens (AC IOL), and a 100 patients had extracapsular cataract extraction (ECCE) with implantation of a 22 D (A constant 118.5) posterior intraocular lens (PC IOL). Using the SRK II regression formula, lens powers were anticipated to give a postoperative refraction in the AC IOL group of −1.36 D and in the PC IOL group of −1.76 D, according to measurements in an average Caucasian eye. All surgery was carried out using a standard limbal-based incision, and closed with sutures.

Postoperatively patients were offered an incentive for reattendance. The refraction was measured on a Topcon RM-A6000 autorefractometer after 8 weeks and after 6 months. Sutures were removed at 8 weeks to adjust the refraction if more than 2 D with the rule astigmatism was present. The spherical equivalent of the 6 month refraction was calculated.