Eye (2004) 18, 534–552

www.nature.com/eye

LETTERS TO THE JOURNAL

Sir,

The long-term results of nonexpulsive total iridodialysis: An isolated injury after phacoemulsification

Eye (2004) **18,** 534–536. doi:10.1038/sj.eye.6700710

Small self-sealing incisions in phacoemulsification cataract surgery confer great incision strength and stability *in vivo*.[1,2] Isolated traumatic aniridia is extremely rare. The presented case is a non-expulsive total iris avulsion and complete iris absorption. To our knowledge this is the first case reported. The long-term sequelae of this patient and the biomechanics of self-sealing incisions are discussed.

Case report

A 79-year-old Caucasian woman presented having fallen and struck her right eye against a toilet seat. Eight weeks earlier she had undergone an uncomplicated right sutureless phacoemulsification cataract extraction through a 3.5–4.0 mm superior incision, and insertion of a silicone folding intracapsular intraocular lens (IOL). Prior to the fall her right visual acuity was 6/9 unaided.

On examination, the anterior chamber was well formed and the corneal incision intact. She had a complete hyphaema with dense material inferiorly. Her best-corrected visual acuities (BCVAs) were perception of light in the right and 6/12 in the left, intraocular pressures 48 in the right and 12 in the left; the globe was intact.

The patient was treated with systemic carbonic anhydrase inhibitors, topical steroids, and topical glaucoma medication. Six days post-trauma it was apparent that she had suffered a 360° iridodialysis, and the dense material inferiorly was rolled up iris. The IOL was *in situ* and stable within the capsular bag. The avulsed iris gradually shrunk in size accompanied by increased anterior chamber cells and eventually disappeared 4 weeks post-trauma, leaving the patient aniridic. Iris absorption was accompanied by episodic elevations of intraocular pressure. Eight weeks post-trauma the hyphaema had completely resolved and the intraocular pressure settled at 14–18 mmHg without medication (Figure 1).

The patient's (BCVA) improved to 6/9 in the right eye. However, she experienced glare and refrained from driving.

Over the following 4 years there was opacification and phimosis of the capsule resulting in an excellent cosmetic pseudo-pupil with pseudoiris (Figure 2). Following posterior Yag capsulotomy her visual acuity is 6/9 unaided.

Despite aniridia the intraocular pressures remain normal, 16 mmHg in both eyes without medication, and normal grade 4 angles. The IOL remains stable and there is no zonular dehiscence.

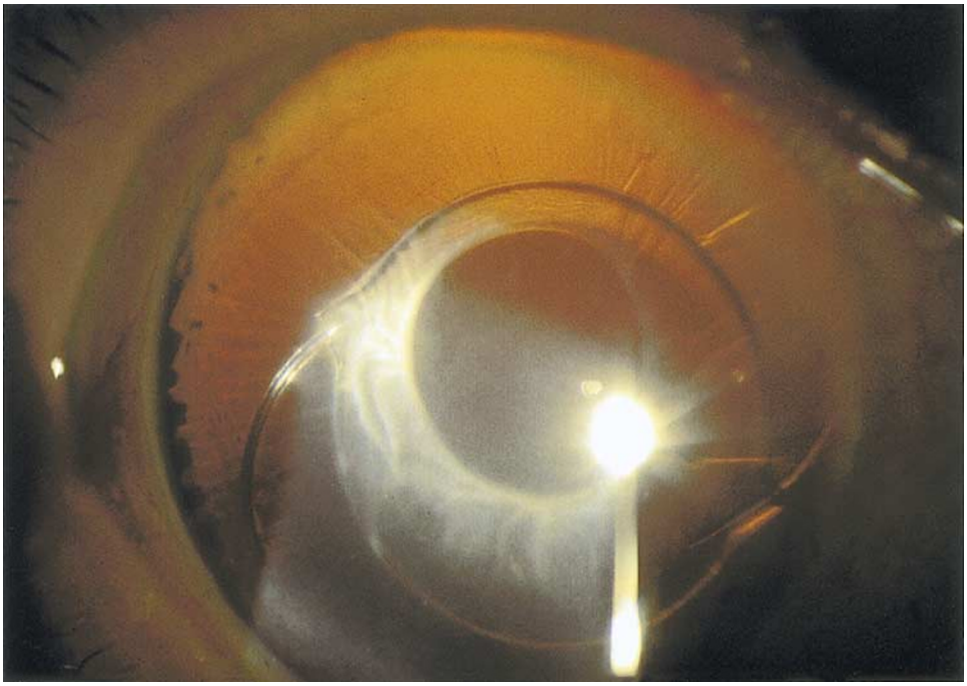

Figure 1 Silicone intraocular lens within intact capsule and traumatic aniridia.

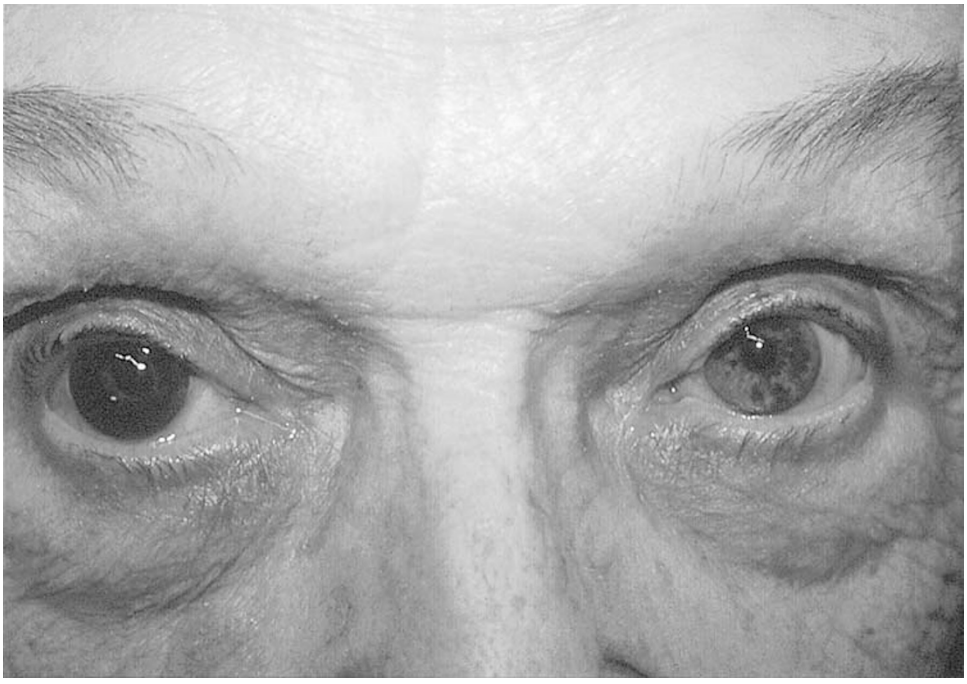

Figure 2 Cosmetic appearance of opacified capsule.

Comment

Navon,[3] Ball[4] and Rossa[5] have all reported cases of blunt trauma and expulsive iridodialysis following phacoemulsification surgery. This case shares similar characteristics, the disinsertion was at the iris root, and the capsular bag was completely unharmed. The proposed mechanism of injury is that (1) the force of the trauma transiently distorted the cataract incision, causing it to leak. (2) Aqueous outflow created a lifting action over the iris and drew it to plug the wound by the Bernoulli effect.[6] (3) The sudden block in aqueous flow created a pressure gradient across the tunnel sufficient to disinsert the iris at its thinnest and weakest point, the root. (4) Outflow of aqueous depressurised the eye, which prevented extension of the wound or creation of new rupture sites. (5) The chamber reformed by the self-sealing properties of the wound, and the disinserted iris settled in the inferior anterior chamber.

To our knowledge this is the first published case of nonexpulsive isolated aniridia. The absorption probably resulted from iris necrosis. Publications have recommended surgical removal of iris in subtotal iridodialysis, to avoid secondary glaucoma from necrotic inflammation.[7] In this case, surgery was avoided. The aniridia caused debilitating glare, but resolved with capsule opacification.

This is a very rare case; it implies that necrotic iris absorption can be treated safely with topical steroids. In addition, the mechanism of developing glaucoma in traumatic pseudophacic aniridia is different from traumatic-phacic aniridia and congenital aniridia.

Acknowledgements

I declare that I do not have any proprietary interest in any of the products used in the medical management of the subject of this case report

References

1 Ball J, Mcleod B. Traumatic wound dehiscence following cataract surgery: a thing of the past? *Eye* 2001; **15**: 42–44.
2 Fine IH. Architecture and construction of a self-sealing incision for cataract surgery. *J Cataract Refract Surg* 1991; **17**: 672–676.
3 Navon SE. Expulsive iridodialysis: an isolated injury after phacoemulsification. *J Cataract Refract Surg* 1997; **23**: 805–807.
4 Ball J, Caesar R, Choudhuri D. Mystery of the vanishing iris. *J Cataract Refract Surg* 2002; **28**: 180–181.
5 Rossa V, Sudmacher R. Contusion-induced traumatic aniridia. *Klinische Monatsblatter fur Augenheilkunde* 1991; **6**: 444–445.
6 Allan BDS. Mechanism of iris prolapse: a qualitative analysis and implications for surgical technique. *J Cataract Refract Surg* 1995; **21**: 182–186.
7 Cauchi P, Chen H *et al*. Primary surgical management in a case of sub total iridodialysis. *Eye* 1999; **13**: 791.

CA Sullivan, A Murray and P McDonnel

The Birmingham and Midland Eye Centre
City Hospital, Dudley Road
Birmingham, B18 7QU

Correspondence: CA Sullivan
Tel: +44 07973 393 507

Fax: +44 0207 937 6450
E-mail: charlie.sullivan@talk21.com

Sir,

Tubulo-interstitial nephritis and uveitis with bilateral optic disc oedema

Eye (2004) **18,** 536–537. doi:10.1038/sj.eye.6700711

Tubulo-interstitial nephritis and uveitis (TINU) is an uncommon oculo-renal disorder of immune origin. It is more common in female adolescents (3:1 female to male ratio). The uveitis is typically bilateral, anterior, nongranulomatous and may occur before, simultaneously or after the onset of the nephritis. Renal involvement is in the form of acute interstitial nephritis (AIN) and it remains unclear whether it is secondary to infection, drug induced or idiopathic.[1] The nephritis is usually self-limited but the uveitis tends to become recurrent.[2,3] In these cases where there is no response to topical treatment, systemic steroids or even second-line immunosuppression may have a beneficial effect in controlling the anterior uveitis and improving renal function.[2,3]

Case report

A previously healthy 24-year-old female presented in eye casualty with a few weeks history of painless, hazy vision in both eyes. She did not have any significant past ocular or medical history and there was no history of consumption of any drugs, particularly antibiotics or nonsteroidal anti-inflammatories.

On examination, her best-corrected visual acuities were 6/18 and 6/6 in the right and left eyes respectively. Biomicroscopy revealed bilateral mild anterior uveitis. Intraocular pressures were 10 mmHg in each eye and there was no evidence of an afferent pupillary defect in either eye. Fundus examination showed bilaterally swollen and hyperaemic optic discs. Retinal veins were slightly dilated, but no retinal haemorrhages were present. There was no evidence of vitritis (Figure 1a).

Visual fields (central 24-2 SITA-FAST) confirmed bilaterally enlarged blind spots with no other visual field abnormality. Fluorescein angiography showed hyperfluorescence of both the optic discs with no dye leakage or vascular staining throughout the transit and there was no evidence of macular oedema in either eye (Figure 1b).

Her blood pressure was 120/80 mmHg, and there was no ankle oedema or lymphadenopathies. Urinalysis showed traces of protein and haematuria. Renal function showed a creatinine of 303 μmol/l, urea of 9.9 mmol/l and total protein of 90 g/l. She had mild microchromic normocytic anaemia, raised IgA and IgM with normal IgG. Her serum angiotensin converting enzyme was within normal limits. Serum analysis showed normal protein electrophoresis, weakly positive atypical ANCA (doubtful clinical significance), but negative p and c ANCA and normal antidsDNA antibodies. She also had a negative rheumatoid factor. Her that erythrocyte sedimentation rate was 99 mm/h. The chest X-ray revealed normal mediastinal contour and lungs were clear.

In view of her abnormal renal function she was referred to the renal team for further assessment. The patient underwent a renal biopsy, which showed diffuse interstitial inflammatory cell infiltrates, comprising predominantly lymphocytes with scattered eosinophils. Glomeruli appeared normal. There was no evidence of vasculitis and a single granuloma was seen (Figure 2).

Figure 1 (a) Colour photo showing bilateral disc swelling. (b) Fluorescein angiography demonstrating late leakage with normal retinal vasculature and maculae.

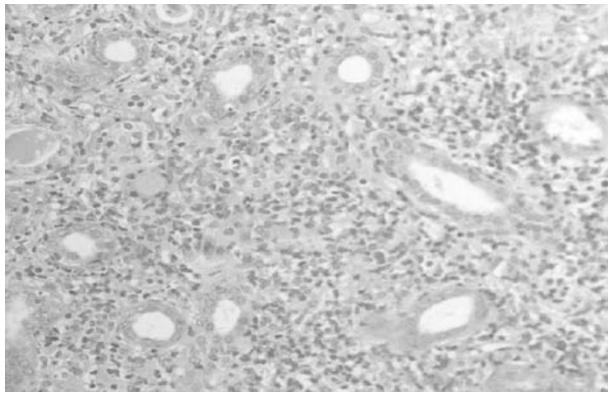

Figure 2 Haematoxylin and Eosin of a section of renal biopsy showing diffuse interstitial inflammatory cells composed of predominantly lymphocytes with scattered eosinophils.