



Figure 1 Prolapsing of the iris immediately after construction of the sclerostomy wound.

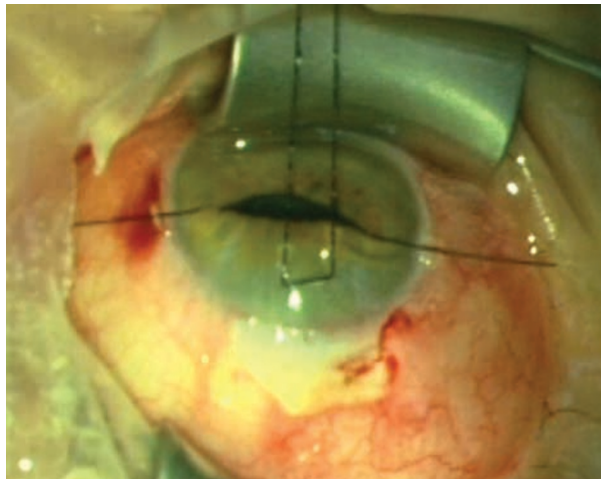


Figure 2 Colour photograph illustrating the FISH Hook technique for preventing iris prolapse.

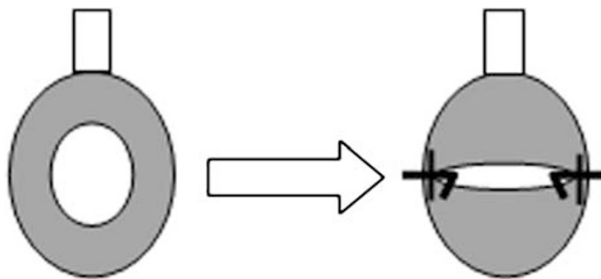


Figure 3 Illustrating the 'fish mouting' of the iris using two iris hooks, preventing iris prolapse.

Case 2: 'the solution'

A 62-year-old Caucasian male with chronic narrow angle glaucoma who was known preoperatively to be taking

the α -1 antagonist, Alfuzozin[®] also underwent trabeculectomy surgery, but IFIS was anticipated. Before the sclerostomy, two limbal paracentesis incisions were made at the 3 and 9 o'clock positions using a 15° blade, through which iris hooks were used to draw the pupil into a fish mouth position (see Figures 2 and 3).

The surgical peripheral iridectomy was easily performed on a taut superior iris. There was no spontaneous, flaccid iris prolapse. The hooks were removed after closure of the scleral flap and the two limbal side ports were hydrated. The iris returned to its preoperative position. The procedure was controlled and uncomplicated.

Comment

The first of our cases illustrates the difficulty in managing IFIS in filtration surgery. None of the suggested techniques reported in the literature¹ worked in this case. An AC maintainer would exacerbate IFIS.

The second case describes the Floppy Iris Syndrome Hull Hooks (FISH Hooks) technique, which allows the surgeon to remain in complete control. Alternatively, a deep sclerectomy procedure, which avoids entering the anterior chamber, could be considered where IFIS is anticipated.

Reference

- 1 Au L, Wechsler D, Fenerty C. Alpha antagonists and intraoperative floppy iris syndrome (IFIS) during trabeculectomy. *Eye* 2007; **21**: 671–672.

JH Norris¹, S Mall² and CAM Burnett³

¹Department of Ophthalmology, Hull and East Yorkshire Eye Hospital, Hull, UK

²Department of Ophthalmology, Hull and East Yorkshire Eye Hospital, Hull, UK

³Department of Ophthalmology, Hull and East Yorkshire Eye Hospital, Hull, UK
E-mail: jononorris@hotmail.com

Competing interest: None.

Eye (2009) **23**, 743–744; doi:10.1038/eye.2008.107; published online 11 April 2008

Sir,
Reply to: Costa DC *et al*

We read with great interest the paper by Costa *et al*¹ on the use of subconjunctival triamcinolone acetonide (SCTA) in the management of corneal endothelial graft rejection.

SCTA has been used for corneal transplant surgery.^{2,3} However, these have been isolated case reports along with multiple arm therapy in often complicated penetrating keratoplasties (PKPs).⁴ The effect of SCTA with steroid drops alone could not be ascertained.

We have used 20–40 mg SCTA after failure of steroid drops for at least a week to treat successfully the episodes of rejection in different types of grafts, including DSAEK,⁴ DALK, and PKP. The outcome was reversal of the rejection and regression of new vessels in all cases.

The only reported side effects were conjunctival ulceration⁵ and raised intraocular pressure (IOP).^{6,7} SCTA has variable duration of action in patients and may depend on technique and site of application along with independent patient variability.

It appears that SCTA acts by locally suppressing the immune response. This local suppression is over a period of time due to the crystalline nature of the drug. The long acting and constant presence of local steroid appears to be an important action as TA is only a moderate strength steroid, four times the strength of hydrocortisone.⁸ In addition, there may be a steroid-mediated local inhibitory action on the new vessels.^{9,10}

Subconjunctival steroids appear to achieve intraocular penetration mainly through the temporary incision leakage into the tear film and then through the cornea into the eye.¹¹ There is also scleral and local vessel absorptions, which probably become more important once the incision has healed and if the steroid remains, and is greater in the inflamed than the normal eye.^{11,12} We suggest that if SCTA is used for corneal graft rejection, it should be placed as close to the limbus as possible.^{8,12}

SCTA has been successfully used to reverse neovascularisation in rabbits. This study showed that triamcinolone was present in the cornea for at least 2 weeks after triamcinolone injection.⁸ As new vessels can mature over 5–6 weeks,¹³ SCTA should be considered early in the management of corneal new vessel formation, which is resistant to topical steroids.

Finally, we would like to congratulate the authors for their excellent study. We believe that SCTA is a very promising therapeutic approach for corneal graft rejection.

References

- Costa DC, De Castro RS, Kara-Jose N. Case-control study of subconjunctival triamcinolone acetonide injection *vs* intravenous methylprednisolone pulse in the treatment of endothelial corneal allograft rejection. *Eye* 2008 (e-pub ahead of print 26 September).
- Sturman RM, Laval J, Sturman MF. Subconjunctival triamcinolone acetonide. *Am J Ophthalmol* 1966; **61**(1): 155–166.
- Levenson JE, Brightbill FS. Endothelial rejection in human transplants. *Arch Ophthalmol* 1973; **89**(6): 489–492.
- Athanasiadis Y, Novitskaya E, Nithyanandrajah GA, Sharma A. Subconjunctival triamcinolone for the treatment of corneal graft rejection and new vessels. *Cont Lens Anterior Eye* 2008 (e-pub ahead of print 8 August).
- Agrawal S, Agrawal J, Agrawal TP. Conjunctival ulceration following triamcinolone injection. *Am J Ophthalmol* 2003; **136**(3): 539–540.
- Athanasiadis I, Nithyanandrajah GA, Kumar B, Sharma A. Reversal of steroid induced raised intraocular pressure following removal of subconjunctival triamcinolone for cataract surgery. *Cont Lens Anterior Eye* accepted for publication.
- Mills DW, Siebert LF, Climenhaga DB. Depot triamcinolone-induced glaucoma. *Can J Ophthalmol* 1986; **21**(4): 150–152.
- Gaudio PA. A review of evidence guiding the use of corticosteroids in the treatment of intraocular inflammation. *Ocul Immunol Inflamm* 2004; **12**(3): 169–192. Review.
- Ugarte M, Williamson TH. Intravitreal steroids: from mechanisms to clinical practice. *Curr Med Lit* 2007; **6**(4):1–9.
- Murata M, Shinji S, Horiuchi S, Taira M. Inhibitory effect of triamcinolone acetonide on corneal neovascularisation. *Graefes' Archive for Clinical and Experimental Ophthalmology* 2006; **244**(2): 205–209.
- McGhee CN. Pharmacokinetics of ophthalmic corticosteroids. *Br J Ophthalmol* 1992; **76**(11): 681–684. review.
- McCartney HJ, Drysdale IO, Gornall AG, Basu PK. An autoradiographic study of the penetration of subconjunctivally injected hydrocortisone into the normal and inflamed rabbit eye. *Invest Ophthalmol* 1965; **4**: 297–302.
- Tombran-Tink J, Barnstable CJ. *Ocular Angiogenesis: Diseases, Mechanisms, and Therapeutics*, 1st ed. Humana Press: Totowa, New Jersey, 2006; 45–71.

Y Athanasiadis¹, D de Wit¹, V Kumar², John E Moore³ and Anant Sharma¹

¹Department of Ophthalmology, Moorfields at Bedford Hospital, Bedford, UK

²Cardiff Eye Unit, University Hospital of Wales, Cardiff, UK

³Department of Ophthalmology, Royal Victoria Hospital, Belfast, UK

E-mail: asharma263@hotmail.com

Eye (2009) **23**, 744–745; doi:10.1038/eye.2008.366; published online 19 December 2008