



Figure 1 Three-way tap turned towards aspiration line for transvitrectomy injection.

is turned to close off the aspiration line to the vitrectomy pump and the substance injected via an assistant, with the surgeon directing the port of the probe to the desired location. After injection, the three-way tap is again turned off to the line, allowing active aspiration from the eye.

The advantages of the system are that the injection is directed through the side port of the probe and hence not directly towards the retina, thus reducing the risk of subretinal injection. Furthermore, the injection can be directed to the area of interest, for example, peripheral membranes. There is no need to enter and exit the eye for injection or aspiration of the injected substance, thus reducing potential retinal tear formation and pathogen entry into the eye.

A couple of points regarding the technique are worth observing. There is some dead space between the injection point on the three-way tap and the cutter port. With the set-up we have used this is ~0.45 ml. This volume is irrelevant in terms of heavy liquids and diluted triamcinolone, but is more significant with low-volume membrane stains. We have, however, found that there is sufficient volume in the stains we have used to provide adequate staining. It is also important for the three-way tap to be primed with the infusion solution at the start of the case to avoid air injection during injection, which is important when injecting into a fluid-filled eye.

In conclusion, this is a simple and safe technique that reduces instrument exchange and improves surgical flow.

Conflict of interest

The authors declare no conflict of interest.

Reference

- 1 Ghosh S, Issa S, El Ghrably I, Stannard K. Subretinal migration of trypan blue during macular hole and epiretinal membrane peel: an observational case series. Is there a safer method? *Eye* 2010; **24**(11): 1724–1727.

Q Mansoor, J Smith and D Steel

Sunderland Eye Infirmary, Sunderland,
Tyne and Wear, UK
E-mail: mans_qasim@yahoo.com

Eye (2011) **25**, 954–955; doi:10.1038/eye.2011.36;
published online 11 March 2011

Sir, Reply to Mansoor *et al*

We thank Mansoor *et al*¹ for their interest in our article ‘Subretinal migration of trypan blue during macular hole and epiretinal membrane peel: an observational case series. Is there a safer method?’² We acknowledge their alternative technique and agree that because the dye would come out of the side port of the vitrectomy probe it would also reduce the risk of fluid getting under the retina and owing to less instrument exchange there is less chance of iatrogenic retinal tear or introduction of infection.

Regarding their comment about their technique improving the flow of the surgery, we note that the authors contradict their original comment, wherein they mentioned about the dead space that might dilute the dye injection and that the system needs priming to avoid this dead space interfering with the dye injection. This process is a whole extra step and hence does not contribute to the flow of the surgery except for the need for less instrument exchange. Our technique of dye injection from a prefilled backflush flute needle delivers concentrated dye at the point of interest.

Further, the technique by Mansoor *et al*¹ needs the injection to be done by an assistant. Although we acknowledge the help of an assistant in such complex procedures, we are also aware of the fact that some incidents wherein subretinal dye injection had occurred were due to accidental forceful dye injection by the assistant, where the surgeon had no control of the dye flow, as documented by Arevalo and Garcia.³

We agree with the fact that for heavy liquids and triamcinolone the transvitrectomy injection may be a safe method, but in situations where the dye has to be injected in a more controlled manner and where the force of the injection itself may be harmful to the retina, we propose that the backflush technique still holds its merits.

Conflict of interest

The authors declare no conflict of interest.

References

- 1 Mansoor Q, Smith J, Steel D. Transvitrectomy injection of low-viscosity substances. *Eye* 2011; **25**(7): 954–955.
- 2 Ghosh S, Issa S, El Ghrably I, Stannard K. Subretinal migration of trypan blue during macular hole and epiretinal membrane peel: an observational case series. Is there a safer method? *Eye* 2010; **24**(11): 1724–1727.
- 3 Arevalo JF, Garcia RA. Macular hole surgery complicated by accidental massive subretinal indocyanine green, and retinal tear. *Graefes Arch Clin Exp Ophthalmol* 2007; **245**(5): 751–753.

S Ghosh, S Issa, I El Ghrably and K Stannard

Royal Victoria Infirmary, Newcastle, UK
E-mail: kevin.stannard@nuth.nhs.uk

Eye (2011) **25**, 955–956; doi:10.1038/eye.2011.35;
published online 11 March 2011

Sir,
Incidence of post-operative endophthalmitis following 23-gauge transconjunctival sutureless vitrectomy in the United Kingdom: a survey

We carried out a confidential and anonymous 19-question online survey aimed at members registered on the Britain & Eire Association of Vitreoretinal Surgeons (BEAVRS) online forums, looking at rates of post-operative endophthalmitis following 23-gauge (23G) trans-conjunctival sutureless vitrectomy (TSV). Participants were asked to state the total number of 23G TSV cases performed in their career, and the number of cases of post-operative endophthalmitis that occurred from these. Endophthalmitis was not defined. Participants were asked to check surgical logbooks for accuracy before quoting case and complication numbers.

In all, 45/144 members registered on the BEAVRS online forums in April 2009 participated, giving a 31% response rate. Of the participants, 36% preferred 23G. Of these, the most popular port system was Alcon-based for 39, 52% had performed a two-step port entry technique, and 87% had performed a conjunctival sac wash with 5% povidone-iodine. In addition, 26% routinely used fluid-air exchange to prevent hypotony even when there was no other clinical indication for endotamponade, and 87% gave antibiotics sub-conjunctivally. A total of 4944 23G TSV cases were estimated to have been performed by 23 surgeons. Two cases of post-operative infective endophthalmitis were reported, giving an overall incidence rate of 1 in 2472 (0.040%).

This survey had a low response rate. This is likely due to the fact that the BEAVRS forums are open to membership from ophthalmic trainees and VR surgeons outside the United Kingdom (who were not eligible to participate), that not all UK VR surgeons practice 23G TSV (and therefore may have decided not to participate in the survey), and that some surgeons do not like discussing operative complication rates. Without documentary evidence, the numbers of cases performed as quoted by participants can only be taken as estimates.

Internationally published rates for 20G vitrectomy range from 0.018%¹ to 0.07%.² The only UK evidence quotes 0.038%.³ Therefore, the estimated rate of post-operative endophthalmitis of 0.040% for UK-based 23G TSV is acceptable when compared with these numbers. Obtaining a more accurate rate would require a prospective national audit with an open reporting system for complications.

Conflict of interest

The authors declare no conflict of interest.

References

- 1 Kunimoto DY, Kaiser RS, Wills Eye Retina Service. Incidence of endophthalmitis after 20- and 25-gauge vitrectomy. *Ophthalmology* 2007; **114**(12): 2133–2137.

- 2 Cohen SM, Flynn Jr HW, Murray TG, Smiddy WE. Endophthalmitis after pars plana vitrectomy. The Postvitrectomy Endophthalmitis Study Group. *Ophthalmology* 1995; **102**: 705–712.
- 3 Mollan SP, Mollan AJ, Konstantinos C, Durrani OM, Butler L. Incidence of endophthalmitis following vitreoretinal surgery. *Int Ophthalmol* 2009; **29**(3): 203–205.

KC Patel¹ and R Rahman²

¹Hull Royal Infirmary, Hull, UK
²Calderdale Royal Hospital, Halifax, UK
E-mail: karnesh@doctors.org.uk or
binarahman@fsmail.net

This study was previously presented at BEAVRS 2009, Amsterdam.

Eye (2011) **25**, 956; doi:10.1038/eye.2011.46;
published online 11 March 2011

Sir,
Diagnosis of fungal keratitis by *in vivo* confocal microscopy: a case report

Fungal keratitis (FK) is a severe blinding eye disease and a major cause of ocular morbidity.¹ The clinical features of FK are not specific and the diagnosis is frequently not suspected until an aggressive treatment for bacterial, viral, or amebic keratitis has failed.

Case report

We report a case of a 65-year-old woman who developed a severe infectious keratitis in her left eye after a corneal injury caused by a tree branch and was initially treated by her family doctor with a local combination of tobramycin and dexamethasone. After 4 days she presented to an ophthalmology department for decreased vision and increased pain in her left eye. On initial evaluation, best-corrected visual acuity was hand movement in her left eye. Clinical examination revealed numerous purulent secretions, a conjunctival hyperaemia, and a large irregular whitish central corneal infiltrate (4.5 mm × 5 mm) with 1 mm hypopyon. The left eye fundus could not be visualized. Examination of her right eye was normal. Corneal scrapings were analysed by direct examination and culture. She was started on hourly topical fortified tobramycin, gentamicin and vancomycin, and oral levofloxacin. After 3 days, presence of *Pseudomonas aeruginosa* was identified, vancomycin and tobramycin were stopped, and topical fortified ceftazidime was added according to bacterial sensitivity. However, after 5 days of this treatment the corneal infiltrate increased in size and depth, and the hypopyon increased to 2 mm (Figure 1a). The patient was referred to our department for an *in vivo* confocal microscopy (IVCM) examination.

Interestingly, IVCM images (Heidelberg Retina Tomograph 3—Rostock Cornea Module, Heidelberg Engineering, Heidelberg, Germany) of the left eye