CORRESPONDENCE

Sir,

Is retinopathy of prematurity seasonal? Implications for screening and treatment

Retinopathy of prematurity (ROP) is a potentially avoidable cause of childhood blindness, the stages of which have been defined by the International Classification of Retinopathy of Prematurity.[1] In the United Kingdom, screening of at-risk babies (birth weight <1500 g or <32 weeks gestational age) occurs until vascularization is complete, or until disease progression mandates treatment.[2,3] It has been shown internationally that infants with different characteristics can develop severe ROP, associated with the level of the country's development, emphasizing that ROP screening programmes need to be appropriate for the local population.[4] In light of this, we wished to evaluate if a pattern existed for ROP screening and treatment for our population, which could be affected by NHS work patterns.

It is commonly recognized that there is a steady monthly increase in the general population birth rate from January, with a peak in August and then a gradual decline to December. This has also been the pattern in Glasgow. We reviewed our theatre logbook and identified 129 ROP laser procedures from 1994 to 2010. In this time period we discovered a peak of treatment in September, with a lesser peak in February and June. This pattern was mirrored by the average screening events in the past 2 years (see Figure 1). This seasonal pattern of ROP has not been described before with reference to the NHS workforce, with peaks around the times of widespread junior doctor changeover in all specialties at the start of August and February.

This seasonal trend may have implications for service provision and maintaining safe continuity of care at times of junior staff turnover (for referral and communication) and senior staff leave (for service delivery). Severe ROP requiring treatment is infrequent in the United Kingdom, yet this treatment is specialized, and should be performed by ophthalmologists with appropriate training and competence. It is the view of the Guideline Development Group for ROP that once identified, treatment should occur within 48 h.[3] Clinicians providing ROP treatment should be aware that their workload will have seasonal variation, with peak times of service delivery for their population, and plan accordingly.

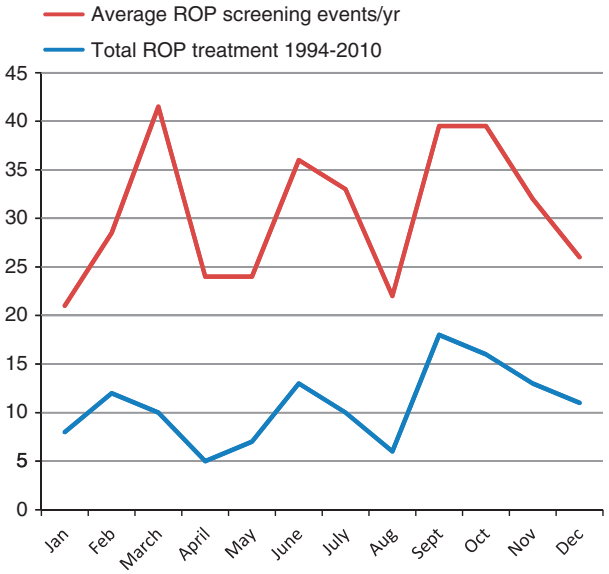

Figure 1 Graph illustrating average episodes of ROP screening per month and ROP treatment. Note the seasonal peaks—around the two time periods for widespread changeover of junior medical staff (and summer leave periods for senior staff).

Conflict of interest

The authors declare no conflict of interest.

References

1 International Committee for the Classification of Retinopathy of Prematurity. The International Classification of Retinopathy of Prematurity revisited. *Arch Ophthalmol* 2005; **123**(7): 991–999.

2 Chen J, Stahl A, Hellstrom A, Smith LE. Current update on retinopathy of prematurity: screening and treatment. *Curr Opin Pediatr* 2010; e-pub ahead of print 8 December 2010; doi:10.1097/MOP.0b013e3283423f35.

3 Royal College of Ophthalmologists, Royal College of Paediatrics and Child Health. *Guideline for the Screening and Treatment of Retinopathy of Prematurity.* RCPCH, 2008, http://www.rcpch.ac.uk/Research/ce/RCPCH-guidelines/ROP.

4 Gilbert C, Fielder A, Gordillo L, Quinn G, Semiglia R, Visintin P *et al.* Characteristics of infants with severe retinopathy of prematurity in countries with low, moderate and high levels of development: implications for screening programs. *Pediatrics* 2005; **115**(5): e518–e525.

D Lockington[1], TE Lavy[2] and JR MacKinnon[2]

[1]Tennent Institute of Ophthalmology, Gartnavel General Hospital, Glasgow, UK
[2]Yorkhill Royal Hospital for Sick Children, Glasgow, UK
E-mail: davidlockington@hotmail.com

Eye (2011) **25,** 954; doi:10.1038/eye.2011.47; published online 4 March 2011

Sir,

Transvitrectomy injection of low-viscosity substances

Ghosh *et al.*[1] present three cases of inadvertent trypan blue injection into the subretinal space and suggest an alternative safer method of injection into the vitreous cavity using a backflush flute.

Low-viscosity substances such as stains, triamcinolone, and heavy liquids are commonly used during vitrectomy surgery. We would like to suggest an alternative method of injecting any of these substances—that of injection through the vitrectomy probe itself.

A three-way tap is inserted into the distal split point in the aspiration tubing of the vitrectomy probe and a syringe containing the low-viscosity substance is attached (Figure 1). To allow injection, the three-way tap

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 $\sim$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