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Sir,
Variation in management during and after retinal surgery for retinopathy of prematurity

We read with great interest the paper of Chen *et al*¹ on the considerable variation in practice among ophthalmologists regarding the anaesthetic methods employed in the treatment of retinopathy of prematurity (ROP) in the UK.

In contrast to data on the ophthalmologic outcome following treatment for ROP, nonophthalmologic short outcome variables are almost absent, resulting in variation in practice of anaesthetic management based mostly on personal opinions, habits, and perceived eminence.

In the design of the initial Multicenter trial of Cryotherapy (Cryo-ROP), uniformity on the ophthalmologic management was emphasized, but caregivers were given freeway on anaesthetic management. Nonophthalmologic complications were recorded in 21/157 (13%) treatments, although the authors concluded that 'while surgery was not stressful, no unexpected complications occurred during or shortly after surgery'.² Since this Cryo-ROP trial in the 1980s, both ophthalmology and neonatology have changed.

At present, laser treatment, based on the ophthalmologic advantages of laser treatment, is the preferred treatment modality, but this switch was also of relevance for some non-ophthalmologic outcome variables because we recently documented that laser treatment resulted in a most limited postoperative inflammatory response and a faster clinical recovery.^{3,4}

Laser photocoagulation was associated with a minor increase in C-reactive protein (CRP) compared with a marked increase after cryoablation, reflecting reduced tissue damage and inflammation of laser photocoagulation compared to cryoablation.³ Using standardized evaluation and treatment of pain after surgery in a single neonatal unit, a significant decrease in

Table 1 Clinical characteristics in infants who received cryotherapy for retinopathy of prematurity (1996–2001) or laser treatment (2001–2005)

	1996–2001	2001–2005
Number of infants	42	19
Gestational age at birth (weeks)	26.3 (1.5)	25.8 (1.2)
Weight at birth (g)	764 (188)	689 (135)
Postnatal age at surgery (days)	62.5 (14.5)	63 (13.5)
Weight at surgery (g)	1705 (340)	1488 (256)

Results reported by mean and SD.

duration of postoperative ventilation, in postoperative administration of analgesics, and in time until regain of full enteral feeding, was documented in infants who received laser photocoagulation compared with cryo-treated neonates.^{4,5}

Neonatal care has also changed. Since the 1980s, survival rates at threshold of viability have increased dramatically, resulting in an even more vulnerable group of preterm neonates who need laser treatment, as illustrated by the decrease in weight at surgery in our unit over the last 10 years (Table 1).^{3–5} There is a trend to treat retinopathy in an earlier phase in an attempt to ameliorate long-term visual outcome.⁶ Such strategy is likely to further increase the number of infants who will undergo retinal surgery. Caregivers of various disciplines (ophthalmologists, anaesthesiologists, neonatologists) should, therefore, embark on a common project to at least document the nonophthalmologic outcome variables in a prospective approach, following the different anaesthetic treatment options mentioned by Chen *et al*.¹ The only alternative is to just wait another decade until the next observation on variation of anaesthetic management of ROP appears.^{1,7}

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Sir,
Interesting fundus lesion after LASIK mishap

While widely used in clinical practice, complications from laser *in situ* keratomileusis (LASIK) have been reported since its description by Pallikaris¹ in 1990. Here, we report a case of a young man with an unusual fundus appearance after LASIK-related corneal penetration and lens dislocation.

Case report

The patient, an 18-year-old male received LASIK in the right eye at a local hospital. The cornea was penetrated

and lens dislocated from the eye during the corneal flap creation with the microkeratome, after which the corneal wound was sutured immediately. In this case excimer laser was not applied. At 1 month after LASIK the patient presented to our hospital. The ophthalmologic examination revealed impaired visual acuity (VA) (OD FC/20, OS 6/20) and normal intraocular pressure (OD 11 mmHg, OS 14 mmHg). Ciliary injection and a 'C'-shaped corneal wound was observed in the right eye. The iris partially disappeared and synechia formation occurred with the corneal wound. The pupil was intact but dislocated posterior to the nasal iris. The lens was completely absent (Figure 1a). There was a grey ring with a clear borderline and an area of 4 × 2 PD surrounding the optic disc obliquely. The retina was attached (Figure 1b), however, fundus OCT showed fibrous proliferation under the retina around the optic disc (Figure 1c). The macula was normal. No further measurements were taken except for regular follow-up.

At 7 months post-LASIK VA of the right eye showed improvement (0.4/20) with the best corrected visual acuity (BCVA) of 6/20. The fundus grey ring was still present and reflection of the macula disappeared. Fundus OCT showed an edematous macula (Figure 2a).

At 14 months post-LASIK VA of the right eye, BCVA and the laser interferometer VA were 0.4/20, 12/20 and 16/20, respectively; and macular oedema greatly alleviated. Vitrectomy, iris synechiolysis, and intraocular lens implantation were performed at 1 month after the operation. VA of the right eye was 6/20 and the BCVA was 14/20. The grey ring around the optic disc was almost invisible (Figure 2b).

Discussion

Complications of LASIK surgery in the posterior segment have been reported previously with retinal tear and rhegmatogenous retinal detachment being the most common problems encountered.² However, a grey ring around the optic disc after LASIK-complicating corneal penetration and lens dislocation is extremely rare.

The aetiology of the grey ring is not known. One possibility is that when the cornea was penetrated the excessive negative pressure resulted in a rapid dislocation of the lens. Subsequently, vitreous was displaced anterior and induced a posterior vitreous detachment, which placed traction on the retina around the optic disc. This mechanism is similar to that described by Flaxel,³ Arevalo,⁴ and Mirshahi A.⁵ Alternatively, there may have been compression from the microkeratome on the globe during corneal flap creation. The resultant elongation of the globe and expulsion of the lens can lead to retinal oedema, as well as retinal pigment epithelium and choroidal defects. Therefore, blunt trauma may be one of