

Table 1 Characteristics of children with laser eye burns in Northern Ireland

Case	Presenting date at clinic	Gender	Age	History	Affected eye		Presenting vision		Vision at final clinic visit		History of laser exposure
					RE	LE	RE	LE	RE	LE	
1	9th September 2013	M	9	Sudden blurred vision × 1 week	Right	6/60	6/6	6/9 at 12 months	6/6	Laser bought in Puerto Rico	
2	11th December 2013	M	12	Incidental finding by optometrist	Right	6/12	6/6	6/7.5 at 4 months	6/6	Laser bought in Turkey	
3	29th September 2014	M	15	Noted blurred vision × 1 month	Right	6/7.5	6/4	NA	NA	Laser bought online	
4	2nd October 2014	M	13	Incidental finding by optometrist	Both	6/6	6/5	NA	NA	Laser bought online	
5	29th October 2014	M	16	Sudden blurred vision 1 day	Right	6/7.5	6/6	NA	NA	Friend had laser in classroom	
6	12th November 2014	M	14	Noted blurred vision × 3 weeks	Both	6/7.5	6/6	NA	NA	Laser bought in Spain	
7	26th January 2015	M	11	Incidental finding by optometrist	Left	6/6	6/6	NA	NA	Friend had laser in classroom	
8	30th September 2015	F	13	Sudden blurred vision × 2 weeks	Left	6/5	6/18	6/5 at 4 months	6/5 at 4 months	Boys at school shining laser	
9	14th October 2015	F	12	Noted blurred vision × 1 month	Right	6/9	6/6	NA	NA	Laser bought abroad	
10	30th November 2015	F	15	Incidental finding by optometrist	Right	6/5	6/6	NA	NA	Laser bought online	

NA indicates not applicable as patient discharged after initial visit.

regained vision to a best-corrected Snellen acuity of 6/9 (Figure 1). However, all 10 cases demonstrated persistent retinal pigment epithelium disturbance on OCT that may infer a life-long increased risk for the development of choroidal neovascular membranes. Furthermore, more serious presentations with full-thickness macular holes and premacular subhyaloid haemorrhages have previously been described.²

Following concerns regarding the emerging trend of children with laser-induced eye injuries, we alerted the Public Health Authority in Northern Ireland and the issue was highlighted in the local media in December 2014.³ We support the call by Raouf *et al* for a UK-wide public health campaign to educate children and parents on the dangers of so-called unregulated 'toy lasers' sold abroad and online. We would also suggest that this campaign could optimally be timed for the start of the school year.

Conflict of interest

The authors declare no conflict of interest.

References

- 1 Raouf N, O'Hagan J, Pawlowska N, Quhill F. 'Toy' laser macular burns in children: 12-month update. *Eye* 2016; **30**: 492–496.
- 2 Alsulaiman SM, Alrushood AA, Almasaud J, Alzaaidi S, Alzahrani Y, Arevalo JF *et al*. High-power handheld blue laser-induced maculopathy: the results of the King Khaled Eye Specialist Hospital Collaborative Retina Study Group. *Ophthalmology* 2014; **121**(2): 556–572.
- 3 Public Health Authority Northern Ireland. Available at: <http://www.publichealth.hscni.net/news/laser-pointer-eye-injury-warning> (accessed on 11 December 2014).

E Mc Loone and M O'Neill

Department of Ophthalmology, Eye and Ear Clinic,
Royal Victoria Hospital, Belfast, UK
E-mail: eibhlin.mcloone@belfasttust.hscni.net

Eye (2017) **31**, 662–663; doi:10.1038/eye.2016.247;
published online 11 November 2016

Sir, Response to 'Comment on 'Toy' laser macular burns in children: 12-month update'

We thank Ms Mc Loone and Dr O'Neill for their response to our article. It is with dismay, however, that we see another case series of retinal laser injuries caused by recreational laser devices in children. The authors highlight a number of points that we have also encountered in dealing with such injuries; namely that on-line and street vendors are not appropriate places from which to acquire laser devices. They also highlight that children may not be forthcoming regarding a history of exposure to laser devices, and that clinicians must therefore be aware of laser-induced retinal injury and its clinical features, which include a macular vitelliform-like lesion in the acute stage and, most commonly, retinal pigment epithelial disturbance in the chronic phase.^{1,2}

We are encouraged to see other Ophthalmologists also calling for more action against an entirely preventable cause of visual impairment in children. While we are glad to hear that all children in this series had a Snellen visual acuity of 6/9 or greater, there are reports of children with laser injuries that have poor visual acuities of 20/100 or worse.^{3,4} Furthermore, 8 of the 10 children reported here with laser injuries date from at least 6 months after our initial report of 5 children from Sheffield with retinal injuries secondary to 'toy' lasers,¹ which one could argue ought to have therefore been prevented by an effective national public health educational programme. We agree that a public health safety programme aimed at school children would be an excellent idea to discourage the purchase and recreational use of hand-held lasers. One of the authors has lobbied at a recent UK Government Cross Whitehall meeting and the National Home Safety Committee of the Royal Society for the Prevention of Accidents calling for the same. We strongly encourage any ophthalmologist encountering children with laser-induced retinal injury to report such cases, adding to evidence to support legislation and action against those responsible.

Conflict of interest

The authors declare no conflict of interest.

References

- 1 Raoof N, Chan TKJ, Rogers NK, Abdullah W, Haq I, Kelly SP *et al.* 'Toy' laser macular burns in children. *Eye (Lond)* 2014; **28**(2): 231–234.
- 2 Raoof N, O'Hagan J, Pawlowska N, Quhill F. 'Toy' laser macular burns in children: 12-month update. *Eye (Lond)* 2016; **30**: 492–496.
- 3 Lee GD, Baupal CR, Lally D, Pitcher JD, Vander J, Duker JS. Retinal injury after inadvertent handheld laser exposure. *Retina* 2014; **34**(12): 2388–2396.
- 4 Lally DR, Duker JS. Foveal injury from a red laser pointer. *JAMA Ophthalmol* 2014; **132**(3): 297.

N Raoof¹ and F Quhill²

¹Department of Paediatric Ophthalmology and Strabismus, Moorfields Eye Hospital, London, UK

²Department of Ophthalmology, Royal Hallamshire Hospital, Sheffield Teaching Hospital NHS Foundation Trust, Sheffield

E-mail: nazraoof@doctors.org.uk

Eye (2017) **31**, 663–664; doi:10.1038/eye.2016.250;
published online 11 November 2016