Macular thermal injuries resulting from laser devices

Investigators:
Dr Gerard Reid1*, Dr Ruth Darbyshire2*, Mr Martin McKibbin3^, Mr John Buchan4^, Ms Eibhlin McLoone5^.

1 Ophthalmology trainee (ST3), Northern Ireland Deanery. Royal Victoria Hospital, 274 Grosvenor Road, Belfast BT12 6BA.
2 Ophthalmology trainee (ST2), Yorkshire and Humber Deanery. St James University Hospital, Beckett Street, Leeds, LS9 7FT
3 Consultant Ophthalmic Surgeon, Department of Ophthalmology, St James University Hospital, Beckett Street, Leeds, LS9 7FT
4 Consultant Ophthalmic Surgeon, Department of Ophthalmology, St James University Hospital, Beckett Street, Leeds, LS9 7FT
5 Consultant Ophthalmic Surgeon. Department of Ophthalmology, Royal Victoria Hospital, 274 Grosvenor Road, Belfast BT12 6BA
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Email: Gerard.Reid@belfasttrust.hscni.net. Tel 07901688332
Email: ruthdarbyshire@nhs.net Tel 07761420646

Abstract
Retinal injuries resulting from inappropriate use of laser devices are mainly sustained by paediatric patients. Worryingly, recent case series and reports show these incidents are becoming increasingly common. Individuals typically present with reduced visual function and may have an accompanying retinal lesion as evidenced by characteristic findings on clinical examination and/or OCT imaging.

This study aims to determine the UK annual incidence of retinal injuries from handheld laser devices, the presenting visual acuity (VA) in these cases and to describe the natural history of the injury.

Our results will inform clinicians on the degree of visual loss associated with retinal injuries from laser devices, the spectrum of clinical findings and current management. Where available we will collect data regarding the context of the injury and how the laser was obtained. This information will support clinicians in managing eye injuries secondary to laser devices and also inform potential targeted public health initiatives.

Case Definition
Any patient found to have a macular lesion consistent with thermal injury on clinical examination and imaging.
The most common presentation is with a pale or pigmented lesion, located within the macula associated with characteristic disruption of the RPE and other retinal bands on OCT. A definite injury will have a corroborating history of laser exposure. Characteristic lesions with no corroborating history will be treated as probable.
Less commonly individuals may present with complications of macular thermal injury. These include: macular hole, sub-hyaloid haemorrhage, vitreous haemorrhage and choroidal neovascular membrane. These will be included where there is a corroborating history of laser exposure..

Reporting Instructions
Please report any new patient that you have seen in the last month, whether you have made the initial diagnosis or the patient has been referred to you. Clinical details will be requested in an initial questionnaire and in a follow-up questionnaire at after 6-months. Patient consent is not required for the collection of this data. This study will not affect patient management or require any additional investigations.

Research Questions

1. What is the annual UK Incidence of thermal retinal injuries resulting from laser devices?
2. What is the distribution of age, sex and socioeconomic status
3. What are the presenting features and the context of the injuries
4. Was another diagnosis considered prior to that of retinal laser injury?
5. What was the ophthalmic management of the injury?
6. What are the Visual outcomes at 6 months and the incidence of Certificate of Visual Impairment registration