Retinal injuries from handheld laser devices: Incidence and epidemiology

Case Definition

Please report all patients new to you presenting within the last month with a retinal lesion consistent with a thermal injury, typically

- focal disruption of the neuroretina,
- commonly but not always with photoreceptor loss
- with or without RPE loss, t
- typically found at the macula.

There may be a known history of exposure to a laser device but cases with no identified cause or condition will also be included.

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Background

Retinal injuries resulting from inappropriate use of handheld lasers are mainly, although not exclusively, 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) and to describe the natural history of the injury. We aim to elucidate the source of lasers in question and identify at risk groups (paediatric, public transport workers etc).

Statement Of Research Questions

1. What is the annual UK incidence of retinal injuries resulting from handheld laser devices?
2. What are the demographic characteristics of affected individuals, and which population groups are at greatest risk?
3. What are the presenting visual features, associated retinal and OCT findings, and common patterns in injury location or laser type among these cases?
4. What management approaches were undertaken?
5. What were the visual outcomes?