

Clinical Surveillance of the Incidence and Outcomes of uncommon Eye Presentations in the West Midlands (EYESPi)

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Background

Recreation related ocular trauma forms a relatively small cohort for single centres. Hence, there is a paucity of data on incidence and outcomes of these uncommon eye problems.

Objectives

Similar to the model approach used by BOSU (British Ophthalmic Surveillance Unit), the West Midlands Collaborative Ophthalmology Network for Clinical Effectiveness & Research by Trainees (The West Midlands CONCERT) conducted surveillance of the incidence and outcomes of relatively uncommon eye presentations in the West Midlands Area.

Region specific data on these conditions will help determine the epidemiology of these presentations, assist in planning future service provisions locally & regionally which can be extrapolated nationally and recognise trends in outcomes.

Study Design

Prospective study with an online reporter card system on a secure shared database. (REDCAP, UoB) was used to record new cases of sport, toy or laser related eye injuries in all Ophthalmology emergency departments within West Midlands with trainees.

Each unit was assigned a lead trainee from CONCERT to ensure project was registered at their local unit and logistical support available. The study was assigned a trainee lead (MP) to collate all data and provide additional support.

Patient demographics, visual acuity, mechanism of injury, extent of eye trauma, subsequent management and length of follow-up were reported.

Results

78 cases were reported over a 24-month period across six sites (See Figure 1 and Table 1). Approximate place of residence for cases is shown in Figure 2.

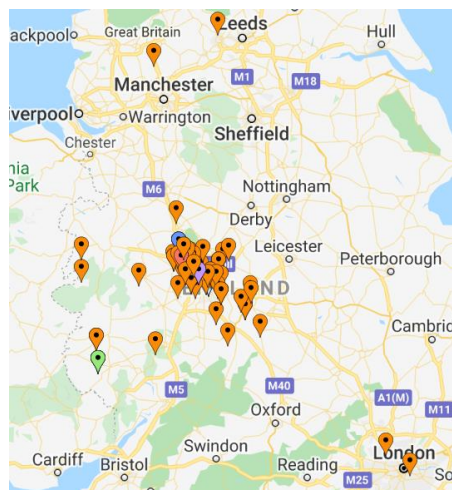
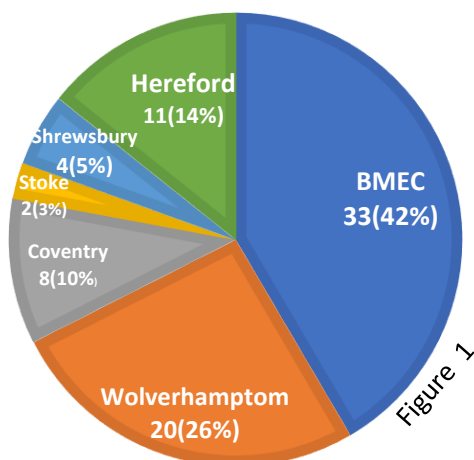


Figure 2- National map of postcode

Table 2: Mechanism of Injury	n(%)
Toy-related	39 (50)
- Nerf Gun Pellets	29 (37)
- Other	10 (13)
Sport-related	37 (4)
- Contact/ Collision injury (Rugby, Football, Boxing)	4 (5)
- Equipment based injury**	31 (40)
- Unknown ball/ mechanism	2 (3)
Other (balloon)	2 (3)

**31(40%) cases were due to equipment based injury: Football, Cricket and Badminton data shown below:



Table 1: Patient Demographics	
Number of sites	6
Number of cases	78
Median age at presentation (All patients)	18 years (Range: 0-69)
Median age at presentation (toy related)	12 years (Range 0-63)
Median age at presentation (sport related)	18 years (Range 7-70)
Sex (M:F) n(%)	56(72): 22(28)

Median Visual Acuity:

Presentation
LogMAR 0.00 (-0.18 – 1.8)

Discharge
LogMAR 0.00 (-0.18 – 1.8)

Mechanism of injury is shown in Table 2. All cases reported were closed globe injuries. The clinical presentation findings are highlighted in Figure 3.

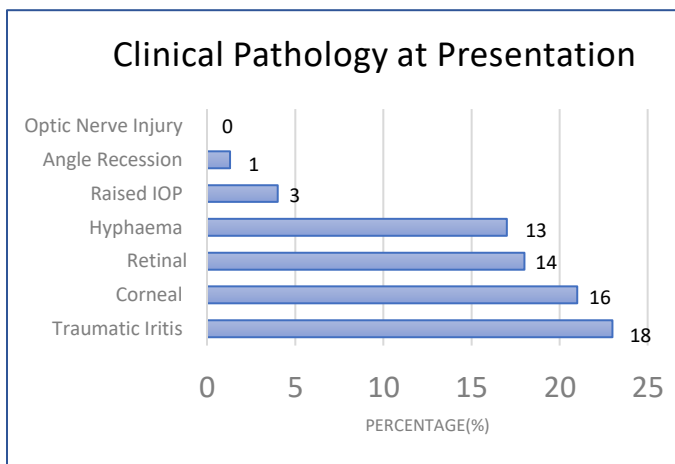


Figure 3: Bar chart showing extent of ocular trauma (n cases at end of bars)

Management

45 (58%) cases required medical management with topical treatment. 4 (5%) patients needed laser retinopexy for retinal tears. 0 patients required surgical treatment.

Follow-up

31(40%) patients were discharged at first presentation. 8(10%) cases were lost to follow-up. Median follow-up was 20 days. Range of follow-up was 1-146 days.

Limitations

Lack of reporting due to staff redeployment and change in population behaviour during COVID pandemic. Therefore, incidence of these injuries cannot be reliably calculated.

Conclusion

Sport and Toy-related eye trauma has a relatively good short-term visual outcome in our cohort. There was a zero incidence of open globe injury in our study. Nevertheless, with a disproportionately younger population at risk of long-term complications we advocate use of eye protection, especially when using Nerf Guns.

No laser related eye trauma was captured. In addition, paediatric patients may not necessarily report an injury has occurred. The signs of laser induced injury may therefore be an incidental finding and present to outpatient clinics.

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