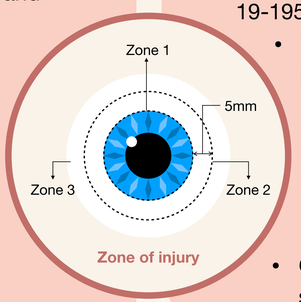
The Epidemiology, Management, and Outcomes of Open Globe Injuries in a Major Trauma Centre in the United Kingdom

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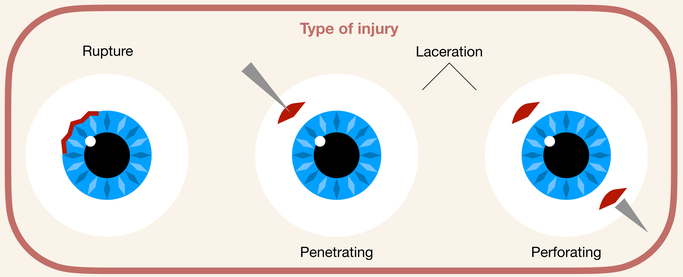
Introduction

- Ocular trauma is a leading cause of blindness worldwide.
- Terminologies and scoring systems were introduced to guide assessment, standardise documentation, and estimate prognosis.
- Open globe injury (OGI) poses a higher risk of sight impairment yet there is no guideline to standardise its management.
- This study aims to investigate the epidemiology of OGIs presenting to a major trauma centre in the United Kingdom, assess current management practices, and identify the key factors affecting final visual outcomes.



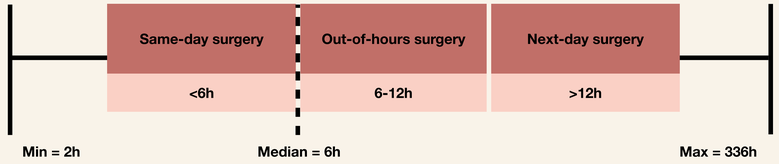
Methods

- This is a retrospective single-centre cohort study.
- Data were obtained from January 2019 to May 2024.
- Best corrected visual acuity (BCVA) was converted from Snellen to LogMAR equivalents for analysis.



Results

- 48 unilateral OGIs were included in this study (n=48).
- Median age was 51.5 years (range: 9-87 years).
- Median interval from presentation to final follow up was 360 days (range: 19-1955 days).
  - The most common method of injury was fall (37.8%) whereas the most common type of injury was rupture (50.0%).
    - Both were most frequently observed among older women.
  - The mean logMAR vision improved by 29.1% from initial to final BCVA.
  - Females had a greater percentage of undesirable visual outcome — no perception of light — compared to males (53.8% vs 25.7%).
  - Globe lacerations and zone 1 injuries were associated with significantly better final BCVA (p<0.03).



- There was a statistically significant improvement when comparing initial and final BCVA in all patients (p<0.01), in those repaired <6h (p=0.02), and in those repaired within 6-12h (p<0.05).
- No significant improvement in BCVA was observed in patients who underwent later repairs.
- Concurrent medical or surgical input outside of ophthalmic or emergency medicine was associated with significantly poorer BCVA (p=0.04).

Results

- The absence of vitreous haemorrhage (VH) led to a significantly better final BCVA (p=0.04).
- The presence of retinal detachment, lens dislocation or previous corneal transplantation did not lead to significantly different BCVAs (p>0.05).
- Only one patient (2.1%) who had an agricultural-related OGI developed endophthalmitis.
- Endopthalmitis was absent in all other patients regardless of surgical timing.
  - 4 were operated after 24 hours from initial review.

Discussion and Conclusion

- Type of injury, zone of injury, presence of VH, time to repair, and concurrent medical or surgical interventions significantly influenced the final BCVAs.
- We have achieved a relatively lower rate of post-traumatic endophthalmitis compared to the literature.
- We recommend that patients with penetrating zone 1 OGIs, as well as those with OGIs contaminated by organic matter or soil, undergo surgical repair within 6h of presentation.
- For other OGIs, the timing of surgery should be planned to ensure optimal anaesthetic safety and surgical conditions, ideally within 12 hours.
- All patients with OGI should receive a course of systemic antibiotics with good intravitreal penetration from the time of presentation.

References

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