Effectiveness of emergency argon laser retinopexy performed by trainee physicians: 20 years on

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Introduction and Background

Laser retinopexy is the first line treatment for retinal tears to prevent progression to retinal detachment. It is an essential skill for ophthalmology trainees working in the eye emergency department. An audit evaluating the treatment outcomes of argon laser photocoagulation performed by trainees for the emergency treatment of retinal tears in a tertiary level eye hospital was first conducted in 2000 to 2002. A re-audit in 2010 to 2011 found the rate of retreatment to have increased. We performed a third audit cycle to re-evaluate the outcomes 20 years on.

Methodology

- 100 consecutive cases of retinal tears who underwent laser retinopexy at the emergency department of a tertiary hospital between May 2019 and February 2020 were reviewed
- Data on patient demographics, assessment, type and location of tear, level of treating doctor, further treatment and progression to retinal detachment was collected.
- Findings were compared to previously reported outcomes between September 2010 to 2011 and August 2000 to December 2002.

Demographics

Mean age 56.6 years

M:F 55:44

98% phakic
2% pseudo-phakic

Visual acuity at presentation

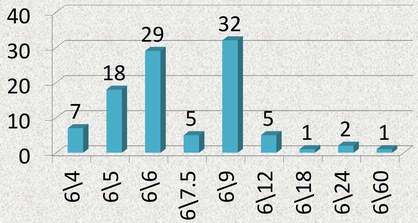


Fig 1. Pre-treatment visual acuity at initial presentation of tear

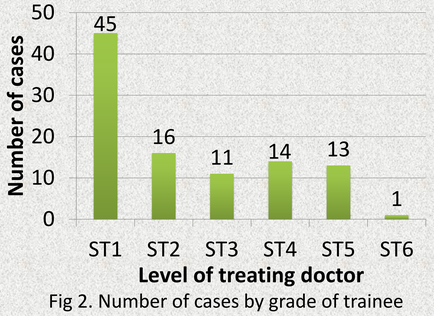


Fig 2. Number of cases by grade of trainee

Characteristics of retinal tear

88% 1 tear
8% 2 tears
4% 3 tears

86% horseshoe tear
14% round hole

80 superior tears
20 inferior tears

Vitreous haemorrhage present in 15/100 cases

Key Results

Emergency retinopexy was insufficient in **42%** of cases and required retreatment

4 out of 100 cases of retinal tears progressed to retinal detachment

This has **increased** in comparison with previous years

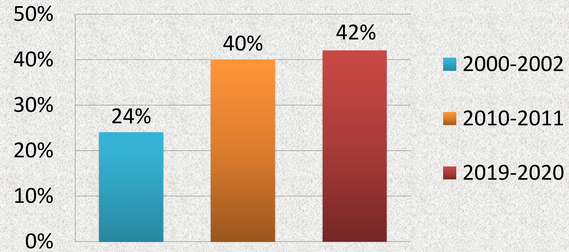


Fig 3. Percentage of cases requiring retreatment across 3 audit cycles

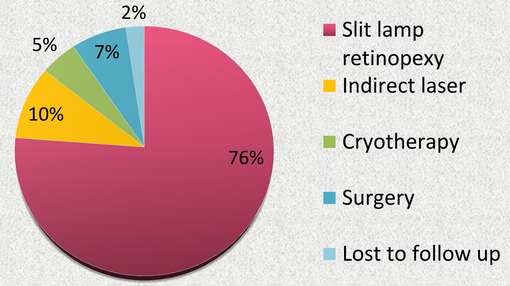


Fig 4. Method of second intervention in cases requiring retreatment

Conclusion

- Number of patients requiring further treatment following emergency laser retinopexy for retinal tears has increased compared to 2000 and 2010.
- Possible contributing factors include location of tear and use of slit lamp instead of indirect ophthalmoscope for retinopexy.
- Recommendations include provision of formal training sessions for trainees on indirect ophthalmology and increased equipment availability.

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