The Rising Incidence of Retinal Detachment in Scotland

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Background and Purpose

- The 2010 Scottish Retinal Detachment (RD) Study reported an incidence of 12.05/100,000 per year.[1]
- A recent publication from Denmark found an increase in RD incidence between 2000 and 2016[2]
- Informal discussions with the vitreoretinal surgeons in Scotland suggested an increase in RD incidence.
- **Purpose of study: to determine whether there has been an increase in RD incidence in the last decade.**
- Scotland has a defined and relatively homogeneous population, making it ideal for an epidemiological study
- Almost all RD surgery is performed by 16 surgeons making up the collaborative network of Scottish VR Surgeons (SCIVRS)
- NHS Scotland provides free sight tests at optometrists, and all ophthalmology consultations, treatment and surgery are provided free of charge.

Methods

- All surgeons prospectively recorded their primary rhegmatogenous RDs from 12/08/19 to 11/02/20. This data was doubled for an estimated annual incidence.
- Data collected: demographics, presenting features and RD cause. No patient identifiable data was collected, therefore no ethics approval was required.
- Exclusions: recurrent RD, RD associated with penetrating injury or previous vitrectomy, and combined traction rhegmatogenous RD.
- Mid-year population estimates were obtained from the National Records of Scotland.[3]

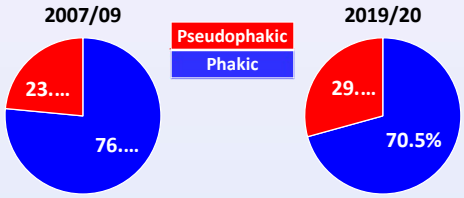
Results

In six months, there were **492** eligible RDs, giving an annualised total of 984.

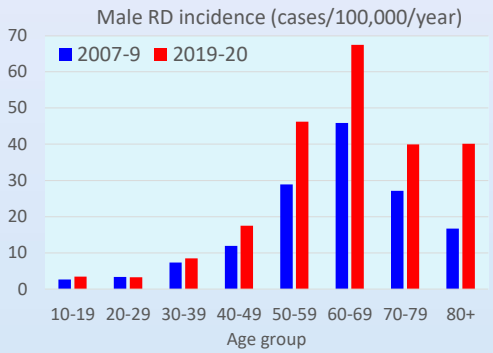
This represents a **54.6% increase** (95% c.i. 39.5% to 71.3%, p<0.0001) in RD incidence from 12.05/100,000 in 2007/09 to **18/100,000** in 2019/20.

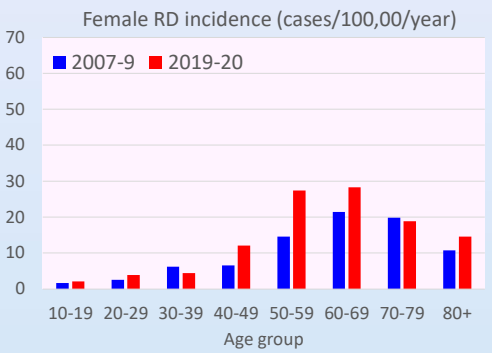
Lens Status

- Percentage of pseudophakic or aphakic eyes increased by nearly 25% (χ^2=6.02, p=0.014)



- In women, the incidence increased from 8.74/100,000 to 12.7/100,000 (p<0.0001), and in men, from 14.75/100,000 to 23.58/100,000 (p<0.0001). Much of the increase is due to a higher incidence in men aged >50.





Quadrants

- There was a decrease in the proportion of small RD involving only one quadrant, and an increase in the number of total and sub-total RD involving four quadrants (χ^2=15.23, p=0.0016). This may be due to the increased number of pseudophakic RD.

	2007-2009		2019-2020	
1 Quadrant	247	23.3%	83	17.5%
2 Quadrants	516	48.6%	261	54.9%
3 Quadrants	211	19.9%	75	15.8%
4 Quadrants	87	8.2%	56	11.8%

Macular Status

- No significant change (χ^2=1.184, p=0.277).

	2007-2009		2019-2020	
Macula Off	650	57.5%	262	54.6%
Macula On	480	42.5%	218	45.4%

Cause of RD

- No significant change

	2007-2009		2019-2020	
PVD - U-tear	975	86.3%	414	86.3%
PVD - GRT	15	1.3%	6	1.3%
No PVD - atrophic hole	56	4.9%	33	6.9%
No PVD - dialysis	67	5.9%	21	4.4%
Schisis RD	17	1.5%	6	1.3%

Discussion

- RD Incidence in Scotland is increasing, by approximately 4% per year
- Extrapolating 6 month data assumes RD occurs at the same rate all year. Although RD is more common in hotter months[4], this 6 month period included November to February, which is unlikely to include prolonged periods of hot weather in Scotland!
- Clinical features were similar to those of the Scottish RD study,[1] suggesting the higher incidence reflects increased numbers rather than higher rates of diagnosis/referral.
- Cataract surgery, a known risk factor,[5] is more frequent. While pseudophakic RDs have doubled from 141 to 282/yr, the total RDs has risen by >300, therefore it is unlikely that a higher rate of cataract surgery is the sole cause of the increase.
- Myopia, another known risk factor, is also becoming more prevalent.[6] In 2000, the highest prevalence of myopia was found in the 10-39 age group. By 2020, the oldest members of this cohort are approaching the age when RD is most likely to occur.

Conclusions

- **The incidence of RD in Scotland has increased by over 50% in the last decade.**
- **This is likely to be due to a combination of increased myopia and increased cataract surgery.**
- **Additional resources will be required to meet the increasing need for RD surgery in the future.**

References

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