Primary rhegmatogenous retinal detachment: 20 years of change

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Abstract

Aim—To compare characteristics, management, and outcome of two groups of patients with primary rhegmatogenous retinal detachment (RRD) presenting to the same vitreoretinal unit approximately 20 years apart.

Methods—124 patients in 1979–80 and 126 cases in 1999 were compared.

Results—More cases were pseudophakic and fewer aphakic in 1999 than 1979–80. More cases of giant retinal tear and fewer dialyses were operated on in 1999. Vitrectomy was a primary procedure in 63% of cases in 1999 but only 1% in 1979–80. Anatomical success rates were statistically similar: 79.8% primary and 88.8% final success in 1979–80, and 84% primary and 93.6% final success in 1999.

Conclusion—Surgical management of primary RRD has changed greatly in 20 years. Success rates have changed little, mainly due to changes in surgical approach undertaken and the anatomical and visual outcome in the two groups. Results were analysed using χ² analysis and Student’s t test.

Results

There were 124 cases of primary RRD in 123 patients treated in the 1979–80 period, and 126 in 1999. There was no difference in the presenting age, sex, side, or refractive error involved.

In 1979–80, 91 (73.4%) patients presented with macula off RRD. There were significantly fewer, 69 (55%), in 1999 (p=0.002). There was a greater number of aphakic RRDs (13.7%) in 1979–80 than in 1999 (0.8%) (p<0.001), and a greater number of pseudophakic RRDs in 1999 (24%) than in 1979–80 when there was only 1 (0.8%) (p<0.001).

There was no difference between RRDs due to single or multiple breaks but in 1979–80 more were due to dialysis, 19 versus eight (p=0.007), and fewer due to giant retinal tear, none versus nine (p=0.02). In 1979–80 the presence of PVR was noted but not graded using the classification in use by us today.1 In 1979–80 32, and in 1999 24 had preoperative PVR, and in 1999 24 patients had PVR, which was not significantly different.

Surgery (fig 1)

In 1979–80, 82 (66%) cases had non-drain procedures, consisting of cryotherapy to the retinal break and external plombage with a silicone explant (external plomb/non-drain), 41 (33%) had conventional procedures with external drainage of subretinal fluid (external plomb/drain), and one had PPV. In 1999, 41 (32%) cases were external plomb/non-drain procedures, five (5%) were external plomb/drain procedures and 79 (63%) were PPVs. Seventeen cases underwent encirclement procedure in 1979–80 whereas in 1999 none did (p=0.00007). In 1999, 32 (25%) cases had PPV with silicone oil tamponade as a primary procedure, 23 of whom had preoperative PVR, and nine had RRD associated with giant retinal tear.

In 1979–80, 99 (79.8%) of 124 cases were successfully reattached with one procedure; 14 cases underwent one further procedure, and three underwent two further procedures. Final anatomical success rate was 88.7% (110 of 124). In 1999 the primary success rate was 106 (84%) cases of 126. Ten cases underwent one further procedure and two had two further procedures. Final success rate was 93.6% (118 of 126). There was no significant difference in the primary (p=0.37) or final success rates (p=0.08) between the two groups.
Primary rhegmatogenous retinal detachment

Vitreectomy
Explant/non-drain
Explant/drain

Explant/drain 25%
Explant/non-drain 74%
Vitreectomy 1%

Figure 1 Surgical methods. Top, 1979–80; bottom 1999.

Of the 33 pseudophakic cases in 1999, five (15%) had external plomb/non-drain procedures, and 28 (85%) vitrectomy. There was an 85% primary success rate. Median preoperative visual acuity in 1979–80 and 1999 was counting fingers. Median postoperative visual acuity was 6/24 in 1979–80 and in 1999. In 1979–80 31% of cases had a final visual acuity of 6/12 or better, while 47% did in 1999. Visual acuity results were statistically similar.

Complications were encountered in both groups in small numbers. There were significantly more intraoperative unplanned SRF drainages in 1979–80, 11 versus three (p=0.004) and more postoperative cataracts in 1999. The success rates of both groups in small numbers. There were significantly more intraoperative unplanned SRF drainages in 1979–80, 11 versus three (p=0.004) and more postoperative cataracts in 1999.

Discussion
In the 20 years that separate our two groups of patients, much has changed in the management of primary RRD. This study is limited because the patients are not directly comparable—methods of assessment, referral practice, and workload have changed. We only compare patients operated upon and not those who presented. Nevertheless, the study allowed us to examine some of those changes, to reappraise the higher proportion of conventional procedures undertaken.

Primary anatomical success was 79.8% in 1979–80 and 84% in 1999. The final success rate was 88.7% in 1979–80 and 93.6% in 1999. The success rates of both groups compare with currently available figures. Sullivan et al reported a primary success rate of 80% in a prospective audit of retinal detachment surgery. The pneumatic retinopexy study group reported a primary success rate of 84% in their scleral buckling group and 62% in the pneumatic retinopexy group. Ah-Fat et al examined the trends in vitreoretinal surgery over a 10 year period in their unit. They found a primary anatomical success rate of 76.6% in 1987 and 84.7% in 1997. Their final success rate was 89.1% in 1987 and 94.3% in 1997. A trial of PPV without scleral buckle for pseudophakic retinal detachments reported by Campo et al achieved an 88% primary and 96% final success rate.

Despite our success rates being similar to those in the literature it is, none the less, disappointing that these figures have not significantly improved in 20 years. We are dealing with significantly fewer dialysis detachments, a type of RRD with a high success rate, and more cases associated with giant retinal tear, a more complex form of RRD.15 We cannot say whether any such cases were encountered in the 1979–80 period, and did not undergo surgery, as we do not know what cases, if any, were excluded.

Pseudophakic RRDs accounted for nearly a quarter of patients presenting with primary RRD in 1999. These cases can pose a problem in that capsule changes and the intraocular lens itself can preclude an adequate view of the posterior pole. Vitrectomy overcomes much of this difficulty and indeed our rate of vitrectomy, at 85%, was higher in this subgroup than in the group as a whole. In 1979–80 14% of presenting cases were aphakic, fundus view, and break detection can also be difficult in such cases.16

The most striking difference in the comparison of the two cohorts of patients was surgical technique. In 1979–80, one case of primary RRD was treated with vitrectomy, now 63% of our cases are managed in this way. The large percentage of vitrectomies reflects a growing trend to manage RRDs in this way.6 10

The most common complication of vitrectomy is nuclear sclerotic cataract and we encountered significantly greater numbers in 1999. The other only significant difference in complication rate was a greater incidence of unplanned SRF drain in 1979–80, reflecting the higher proportion of conventional procedures undertaken.

The overall visual results are similar in each group reflecting the anatomical results.

We have shown a marked difference in current management of primary RRD compared with 20 years ago and outlined the changes in clinical presentation of the patient operated upon. A lack of significant improvement in success rates indicates that further progress must be sought by finding and treating more retinal breaks17 and preventing PVR.18

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