Clinical outcomes in bilateral sequential rhegmatogenous retinal detachment

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Purpose:
To assess the clinical outcomes in patients with bilateral sequential rhegmatogenous retinal detachment (RRD) by utilizing a paired-eye comparison.

Methods:
Retrospective review of consecutive patients with bilateral, sequential RRD treated with pars plana vitrectomy (PPV), scleral buckle (SB), or SB/PPV over an 11 year period (October 2008 to April 2019) from four vitreoretinal practices with a minimum of 6 months follow-up. Data was collected on patient demographics, duration of symptoms, anatomic features of the RRD, surgical procedures, and best-corrected Snellen visual acuity (VA). These variables along with the single operation anatomic success (SOAS) and type and number of surgical procedures were assessed with a paired-eye comparison.

Results:
504 eyes of 252 patients were included. The mean interval between RRD in either eye was 421 ± 416 days. SOAS in the initial eye was 83% with a mean of 1.2 surgeries (range 1-4). SOAS in the subsequent eye was 84% (p=0.80) with a mean of 1.2 surgeries (range 1-4, p=0.75). VA was better in the subsequent eye at presentation (mean 20/62 versus 20/149, p<0.0001) and postoperative month 6 (mean 20/41 versus 20/49, p=0.032). Macula involvement was less prevalent (34% versus 56%, p<0.0001) with fewer quadrants detached (mean 1.9 versus 2.0, p=0.010) in the subsequent eye. Mean duration of symptoms before presentation was significantly shorter in the subsequent eye (mean 5.9 versus 7.5 days, p=0.0081). In patients who underwent a different surgical technique in each eye, SB/PPV yielded a higher SOAS of 96% compared to 69% for either PPV or SB alone in 75 patients (p=0.00019). Finally, SB/PPV yielded SOAS of 90% compared to 69% for PPV alone in 58 patients (p=0.0095).

Conclusions:
In this study of sequential bilateral RRD, the SOAS is similar for each eye, but the second eye is more likely to present earlier, have less anatomic involvement, and achieve better final vision. SB/PPV yielded significantly higher SOAS than PPV or SB alone.