

## Outcomes of 76 Consecutive Cases of 23-gauge Sutureless Transconjunctival Surgery for Posterior Segment Disease

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### PURPOSE

Twenty-five gauge vitrectomy systems possess several advantages over 20-g methods including improved wound healing, conjunctival sparing, and patient comfort. Newer 23-g systems were introduced to improve instrument bore size and rigidity while retaining sutureless technique. The purpose of this study is to describe the safety, efficacy, and visual outcomes of 23-g vitrectomy surgery.

### METHODS

All 23-g cases performed by a single surgeon at a single site from 10/2004 to 10/2005 were retrospectively reviewed. Data abstracted included demographic variables, ophthalmic variables, and surgical complications, including retinal tear or detachment, hypotony  $\leq$  5mm Hg, and choroidal detachment. The outcome variable, Snellen visual acuity, was converted into a logarithm of the minimal angle of resolution (logMAR). Surgical times were collected prospectively during the final study month. The paired t-test was used to compare means with a statistical significance threshold at  $p < 0.05$ .

### RESULTS

All 76 eyes (41 right, 35 left) of 75 patients (38 female, 37 male) were followed for a minimum of 90 days with a mean follow-up duration of 208 days. The mean visual acuity at baseline was 20/194; at post-operative month one was 20/104 ( $p=0.0001$ ); at month three was 20/70 ( $p=0.01$ ); and at final visit was 20/68 ( $p < 0.0001$ ). By diagnosis, patients with macular hole improved from 20/172 to 20/53 ( $p < 0.0001$ ), epiretinal membrane from 20/131 to 20/63 ( $p=0.0024$ ), rhegmatogenous retinal detachment from 20/285 to 20/55 ( $p=0.0013$ ), tractional retinal detachment from 20/190 to 20/61 ( $p=0.0204$ ), and non-clearing vitreous hemorrhage from 20/870 to 20/95 ( $p=0.0670$ ). The mean opening, closing, and operative times were 103, 75, and 1445 seconds, respectively. There were 2 cases of post-operative hypotony, 11 of subconjunctival hemorrhage, and 1 of presumed endophthalmitis, which was culture negative. There were no choroidal effusions, intraoperative retinal breaks, or secondary retinal detachment.

### CONCLUSION

The rates for sclerotomy leakage, hypotony, choroidal effusion, and secondary retinal tear and detachment appeared similar or superior to previously published rates for 25-g surgery. Overall and diagnosis-specific visual outcomes were highly statistically significant. The 23-g vitrectomy system appears safe and effective for sutureless transconjunctival posterior segment surgery.