Long-term Outcomes of Vitreous Floaters Management with 23-Gauge Transconjunctival Sutureless Vitrectomy

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PURPOSE
➢ To evaluate the anatomical and visual outcomes of 23-gauge transconjunctival sutureless vitrectomy for chronic vitreous floaters.

METHODS
➢ Retrospective analysis of a consecutive case series.
➢ 10 eyes of 10 consecutive patients underwent 23-gauge transconjunctival sutureless vitrectomy (TSV) or phaco-vitrectomy surgery (TSPV) for vitreous floaters of more than 6 months duration, affecting visual acuity and significantly affecting quality of life.
➢ Data collected on age, pre & post-operative best corrected visual acuity (BCVA – LogMAR units), intraocular pressure.
➢ Principle outcome measures:
   - Visual acuity, Patient satisfaction and,
   - Surgical complications at 6 months follow-up.
➢ All procedures were performed under local anaesthesia by a single surgeon (MS).
➢ Surgical technique –
   • 23-gauge trocar cannula insertion with the help of pressure plate before proceeding with phacoemulsification.
   • The lens was removed via corneal wound. The capsulorrhexis size was slightly smaller than the diameter of the intraocular lens optic. A 5.5 mm one piece PMMA intraocular lens implant was inserted into the capsular bag. Viscoelastic was removed from the anterior chamber by irrigation and aspiration.
   • Pars plana vitrectomy was performed using 23 gauge instrumentation (Figure 1). The posterior vitreous face was detached by changing the vitreous cutter to aspiration mode only and applying maximum of 600 mm Hg of aspiration on the posterior vitreous cortex near ONH.
   • Diluted Triamcinolone Acetonide (0.04 mg in 0.1 ml) was used to assist complete removal of posterior hyaloid in some cases with partial vitreous detachment or vitreoschisis, the retinal periphery was examined and cryopexy was performed if tears were observed.
   • 23G cannulae were removed in a controlled fashion after exchange of gas if it was required.

RESULTS
➢ Mean age: 69 years
➢ 5 eyes had asteroid hyalosis & 5 eyes had large chronic floaters secondary to PVD
➢ 8 eyes underwent phaco-vitrectomy & 2 eyes were pseudophakic prior to surgery.
➢ Mean pre-operative BCVA – 0.33, Mean post-operative BCVA – 0.15
➢ Mean IOP on day one – 14 mm of Hg
➢ Mean follow-up – 8.5 months

CONCLUSIONS
➢ 23 gauge phaco-vitrectomy is a safe and effective method in the management of vitreous floaters due to asteroid hyalosis and posterior vitreous detachment.
➢ A high anatomical and visual success can be achieved with 23 gauge transconjunctival vitrectomy surgery without short-term or long-term post-operative complications.

REFERENCES

DISCUSSION
➢ Vitreous floaters can cause considerable visual morbidity despite good visual acuity¹. Surgery for this indication is primarily patient-driven² so the techniques employed for the surgery should optimise patient satisfaction whilst minimising the attendant risks.
➢ Minimised ocular surface disruption, shorter operative times and faster visual recovery are some of the inherent advantages of 23-gauge surgery³,⁴ that make the technique particularly appropriate for the surgical management of floaters.
➢ The mean intraocular pressures on day one are consistent with those reported in the literature for 23-G surgery³, whilst no hypotony was observed.

RESULTS
➢ Complications –
   • One eye required per-operative cryotherapy and gas tamponade for an iatrogenic break
   • None of the sclerotomies required suturing
   • No post-operative hypotony, endophthalmitis or retinal detachment
   • 100% of patients were very satisfied with the visual outcome.

Financial disclosure : None
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  - affecting visual acuity and significantly affecting quality of life

- Data collected on age, pre & post-operative best corrected visual acuity (BCVA – LogMAR units), intraocular pressure. Principle outcome measures were visual acuity and surgical complications at 6 months follow-up

- All procedures were performed under local anaesthesia by a single surgeon (MS)
METHODS

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DISCUSSION

- Vitreous floaters can cause considerable visual morbidity despite good visual acuity\(^1\). Surgery for this indication is primarily patient-driven\(^2\) so the techniques employed for the surgery should optimise patient satisfaction whilst minimising the attendant risks.

- Minimised ocular surface disruption, shorter operative times and faster visual recovery are some of the inherent advantages of 23-gauge surgery\(^3,4\) that make the technique particularly appropriate for the surgical management of floaters.

- The mean intraocular pressures on day one are consistent with those reported in the literature for 23G surgery\(^3\), whilst no hypotony was observed.
CONCLUSIONS

- 23 gauge phaco-vitrectomy is a safe and effective method in the management of vitreous floaters due to asteroid hyalosis and posterior vitreous detachment.
- A high anatomical and visual success can be achieved with 23 gauge transconjunctival vitrectomy surgery without short-term or long-term post-operative complications.

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