

Outcome of 23-gauge sutureless transconjunctival vitrectomy for endophthalmitis

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Abstract

Purpose To review the outcomes of 23-gauge transconjunctival vitrectomy in patients with postoperative endophthalmitis.

Methods Non-randomized, interventional case series of patients with postoperative endophthalmitis over a 1-year period.

Results 23-gauge transconjunctival vitrectomy was performed on 6 patients with a mean age of 67.7 years without intraoperative or postoperative complications. There were no cases of postoperative hypotony or wound leak. The mean change in IOP was -4.2 mmHg compared to the preoperative IOP ($P = 0.239$). Final VA improved significantly compared to preoperative VA ($P = 0.062$), with VA of at least 20/40 in 5 of 6 patients (83.3%).

Conclusions 23-gauge transconjunctival vitrectomy is a useful technique for treating postoperative endophthalmitis.

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Keywords: endophthalmitis; vitrectomy; transconjunctival; sutureless; complications; intraocular pressure

Introduction

The advantages of 23-gauge sutureless transconjunctival vitrectomy compared to conventional 20-gauge vitrectomy are shorter surgical^{1–3} and recovery time,^{1,4} and less postoperative discomfort.¹ We reviewed the outcome of 23-gauge transconjunctival vitrectomy in patients with postoperative endophthalmitis.

Case report

Over a 1-year period, vitrectomy was performed on six patients (four acute and two chronic

Table 1 Characteristics of endophthalmitis patients who underwent 23-gauge vitrectomy

Patient	Age	Sex	Type	Culture	Surgery	Duration of surgery (min)	Pre-operative VA	VA on IPOD	Final (stable) VA	Pre-operative IOP	Post-operative IOP	Clinical findings IPOD
1	75	Female	Acute	Enterococcus	TPPV, AC washout	50	LP	20/40	20/20	NA	16	Corneal oedema, fibrin
2	58	Female	Acute	Coagulase negative Staphylococcus	TPPV, AC washout	50	CF	CF	20/20	18	21	Conjunctiva injection, cornea oedema, Descemet's membrane folds
3	76	Male	Acute	Coagulase negative Staphylococcus	TPPV, AC washout, removal of IOL	70	HM	HM	CF	21	21	Corneal oedema, conjunctiva injected
4	80	Female	Acute	No growth	TPPV, AC washout	40	LP	CF	20/40	18	16	Corneal oedema, Descemet's membrane folds
5	54	Female	Chronic	No growth	TPPV, removal of IOL, AC IOL implant	75	20/400	20/400	20/25	20	12	Descemet's membrane folds
6	63	Male	Chronic	Presumed P. Acnes	TPPV	65	LP	HM	20/40	32	18	Subconjunctival hemorrhage

AC, anterior chamber; CF, counting fingers; HM, hand movement; IOL, intraocular lens; LP, light perception; NA, not available; TPPV, Trans pars plana vitrectomy; VA, visual acuity.

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endophthalmitis) (Table 1). The mean surgical and follow-up duration were 58.3 min (range: 40–75) and 13.2 months (range: 9–17) respectively.

In all surgeries, thorough clearance of the vitreous base was achieved. Common findings on the first postoperative day were corneal oedema, conjunctival injection, and subconjunctival haemorrhage. No patient experienced severe pain, postoperative hypotony, or wound leak. The mean intraocular pressure (IOP) on the first postoperative day was 17.3 mmHg (SD \pm 3.4, range: 12–21 mmHg), with a mean change of -4.2 mmHg compared to the preoperative IOP ($P = 0.239$). There were no cases of prolonged postoperative inflammation, or complications such as retinal detachment or macular hole formation.

Final visual acuity (VA) was significantly improved compared to preoperative VA ($P = 0.026$), and was 20/40 or better in 5 of 6 patients (83.3%) overall and 3 of 4 patients (75%) with acute endophthalmitis.

Comment

Our study demonstrates that 23-gauge transconjunctival vitrectomy can be performed safely for both acute and chronic endophthalmitis. Postoperative-wound leak and hypotony have been reported with 25- and 23-gauge transconjunctival vitrectomy systems^{1–5} and may be associated with the removal of peripheral vitreous gel.¹ No patient in our series developed hypotony or subconjunctival bleb formation after surgery.

Increased flexibility of 25-gauge instruments may make complex surgeries more challenging since torsion of the eye is more difficult.¹ With 23-gauge vitrectomy, we were able to indent the eye and clear the vitreous base thoroughly without difficulty.

Visual acuity improved significantly in our patients, with results similar to or better than that reported in reports of elective vitrectomies using 25-gauge systems.^{3–5} The poor VA of patient 3 was due to pre-existing glaucoma and macular pucker.

In conclusion, 23-gauge transconjunctival vitrectomy can be performed safely in patients with postoperative endophthalmitis with no complications or hypotony, and good final VA.

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