Aqueous Release 'Burping' to Treat IOP Spikes Post-Cataract Surgery

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Introduction

- Intraocular (IOP) rise after cataract surgery is an important and common problem. IOP can adversely affect vision and can be particularly detrimental in glaucoma patients with pre-existing visual field defects.
- Previous studies have shown that topical IOP-lowering agents do not completely prevent IOP rises.

What this study adds

- Aqueous release of intraocular pressure rises post-cataract surgery is a safe and effective procedure
- A documented standardised technique for aqueous release to minimise variability and inconsistency between different surgeons

Method

9 patients with an IOP greater than 30mmHg or IOP deemed inappropriately high in view of the ocular condition (e.g. glaucoma) were recruited. These patients underwent 'burping' of the wound and had their IOP measured immediately and 1-2 hours after the procedure. The 'burping' pressure was repeated until satisfactory pressure was noted and no noticeable shallowing of the anterior chamber was observed. A Siedel test with fluorescein 2% was used to test for leaks and patients were given a drop of chloramphenicol 0.5% to prevent any infections. Patients then continued with their regular post-operative care.

Results

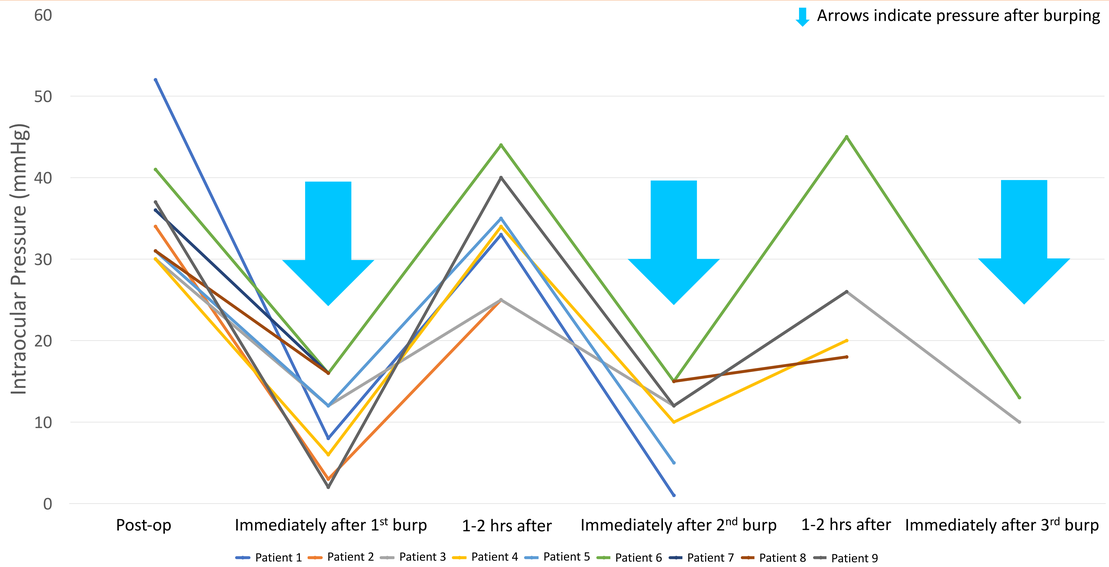
9 eyes (7 right, 2 left) of 9 patients had an average IOP spike of 32mmHg (range 30-52mmHg) had aqueous release without any complications. Immediately after the pressure reduced to an average of 8mmHg (range 2-16mmHg). 6 patients required a second attempt, 1 required a third, and 1 patient required a fourth attempt. IOP check the following day was within normal limits for all the patients.

Table 1: Intraocular Pressure Rise Post-cataract Surgery and Following Aqueous Release

					Intraocular pressure (mmHg)									
Patient	Age	Sex	Eye	Pre-op diagnosis	Post-op	Immediately after 1st attempt	1-2 hours after	Immediately after 2nd attempt	1-2 hours after	Immediately after 3rd attempt	Next day	5 months later	Pre-op regime	Post-op regime
1	86	F	R	-	52	8	33*	1			12	13	I	D, I
2	85	M	R	Glaucoma	34	3	25				10	30		I
3	77	M	R	Glaucoma	30	18, 5	25	12	26	10	14			
4	77	M	L		30	6	34	10	20		15	18	D, I	D
5	80	M	R	Glaucoma	31	12	35	5			21	9	I	D, I, A
6	75	M	R		41	16	44	15	45	20, 10, 13, 10	12	18	D	D, I, C
7	53	M	R	Glaucoma	36	16					25			D, I
8	74	F	R	Glaucoma	31	16		15	18		14**	14	D	D
9	74	F	L		37	2	40	12	26					I, C

F = Female, M = Male, R = Right, L = Left, D = Oral Acetazolamide, I = Iopidine, C = Cosopt, A = Acular; * 30 minutes after, ** 2 weeks after

Figure 1: Line Graph Demonstrating Intraocular Pressure Rise Post-cataract Surgery and Following Aqueous Release



Conclusion

This standardised technique of aqueous release has a role in the immediate management of acute intraocular rise post-cataract surgery to prevent loss of vision and improve patient outcomes.

Discussion

Intraocular pressure spikes post-cataract surgery have been reported to be between <5% and 17% in non-glaucomatous and glaucomatous patients[1-3], although a recent review has stated it may represent 88% of early postoperative complications[4]. The clinical significance of a transient postoperative IOP spike is not well defined. However loss of fixation and further visual field deterioration have been described in glaucoma patients who experienced transient IOP spikes following cataract surgery[5,6]. A recent study described a deterioration of all visual field indices following phacoemulsification and one of the mechanisms hypothesized is the occurrence of early postoperative IOP spikes[7].

At present there is no de facto standard to manage acute IOP rise following cataract surgery and despite several pharmacological options to reduce IOP spike, none have demonstrated to be superior and consistently effective. At the time of this case series, there are no reports in the literature on 'burping' post-cataract surgery.

Protocol and further information

Moorfields Eye Hospital NHS Foundation Trust

NHS

References

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