

Resident-performed immediate sequential bilateral cataract surgery during the COVID-19 pandemic

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Purpose: To assess visual outcomes and patient satisfaction for senior resident-performed immediate sequential bilateral cataract surgery (ISBCS) versus delayed sequential bilateral cataract surgery (DSBCS) during the COVID-19 pandemic, when minimizing healthcare-related exposures for patients and providers are paramount. **Methods:** This was a pilot retrospective cohort study of all ISBCS and DSBCS patients who underwent senior resident-performed cataract surgery from May to September 2020 at a single academic institution. Outcome measures were final corrected distance visual acuity (CDVA), final manifest refraction (MRx), intraoperative and postoperative complications rates, total number of visits, and patient satisfaction assessed postoperatively by telephone questionnaire. **Results:** Twenty-two eyes of 14 patients and 56 eyes of 28 patients underwent senior resident-performed ISBCS and DSBCS, respectively. Final CDVA was 20/25 or better in 21 (95%) ISBCS and 51 (91%) DSBCS eyes ($P = 0.670$). Deviation of final MRx from target refraction was within 0.50 D in 17 (77%) ISBCS and 47 (84%) DSBCS eyes ($P = 0.522$). There was no significant difference in intraoperative ($P = 1.000$) or postoperative ($P = 1.000$) complications. ISBCS patients averaged 3.5 fewer visits than DSBCS patients (5.9 vs 9.5, $P < 0.001$). All ISBCS and 20 DSBCS patients (87%) reported they were "very satisfied" or "satisfied" with their experience ($P = 0.701$). Five of six senior residents responded that they preferred performing ISBCS over DSBCS. **Conclusion:** This early experience suggests that senior resident-performed ISBCS is as safe and effective as DSBCS, with the added benefit of averaging fewer in-person visits. Residency programs should consider offering senior resident-performed ISBCS to select patients during the COVID-19 pandemic.

Key words: COVID-19 pandemic, immediate-sequential bilateral cataract surgery, resident-performed bilateral cataract surgery, resident surgical education

Bilateral cataracts are conventionally treated in a delayed sequence to minimize refractive surprises and endophthalmitis;^{1,2} however, surgical advances and intracameral antibiotics have reduced perioperative risks,³ leading to similar outcomes between immediate sequential bilateral cataract surgery (ISBCS) and delayed sequential surgery (DSBCS).^{3,4} ISBCS benefits include economic savings and reductions in perioperative appointments, which are especially important during the coronavirus (COVID-19) pandemic to limit healthcare-related exposures.⁵⁻⁸

In our early experience with the first reported series of resident-performed ISBCS in the United States, we hypothesized that similar visual outcomes and patient satisfaction would be demonstrated in ISBCS and DSBCS patients.

Methods

Study design/Patient selection

A retrospective chart review was performed for all senior resident-performed bilateral cataract surgeries on the Comprehensive Ophthalmology service at a single academic institution from May through September 2020. This was during the height of the COVID-19 pandemic, when

strict precautionary measures were implemented for elective surgeries, including negative COVID-19 testing for patients prior to surgery. Cases were categorized as ISBCS (resident-performed in one or both eyes) or DSBCS (resident-performed in both eyes). In all cases, the capsulorrhexis was made with a target size of 5.0 mm and the implanted intraocular lens had a standard optic size of 6.0 mm. Povidone-iodine was used to prep the periocular surgical site at the beginning of the surgery, intracameral cefuroxime (1 mg/0.1 mL) was given intraoperatively, and topical antibiotics were started on postoperative day 1. Selection criteria for ISBCS included adult patients (ages 18 years and older) with no active ocular or debilitating medical comorbidities, who were able to lie flat for extended periods of time and who could tolerate surgery under topical anesthesia for at least one eye. Additionally, patients undergoing ISBCS were required to have an escort available to take them home after surgery. Patients were excluded from being offered ISBCS if they had a combined procedure with another service, a history of globe trauma or endophthalmitis, any prior intraocular surgery,

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lens subluxation or iridodonesis, and any increased risk for infection (active ocular surface or adnexal infection, systemic immunosuppression or immunodeficiency). This study was approved by the academic institution's Institutional Review Board on August 18, 2020 and adhered to the tenants of the Declaration of Helsinki.

Data collection

Study data was retrieved from the electronic medical record and recorded using a secure, web-based software platform hosted at the academic institution (REDCap: Research Electronic Data Capture).^[9,10] Demographic information obtained included patient age, sex, and race/ethnicity. Preoperative visit notes were reviewed for ocular or systemic comorbidities and the baseline eye exam. Corrected distance visual acuity (CDVA), intraocular pressure (IOP), cataract type (nuclear, cortical, posterior subcapsular, or mixed), target refraction (the desired final refraction as discussed with the patient during the preoperative visit), and pertinent biometry measurements (axial length, anterior chamber depth, lens thickness, ΔK) were noted.

Surgical notes were reviewed for the type of local anesthesia (topical or subtenon's block), intraocular lens implant (monofocal, multifocal, toric, or other), presence of any intraoperative complications (anterior/posterior capsular tear, zonular tear, vitreous loss, dropped lens), and total procedure time as recorded by the circulating nurse from procedure start to procedure finish for both eyes. For ISBCS, this would include a modified turnover period between eyes (breakdown, room clean, new instrument setup, sterile redraping, and safety timeout) given that the patient remained in the operating room during this time.

After surgery, all patients were started on a topical antibiotic four times daily for 1 week and a topical prednisolone drop taper (four times daily for the first week, then reduced by one drop per week until off). Postoperative results were collected from the day 1 (POD1) and month 1 (POM1) visits. For POD1, the IOP and any significant exam findings were recorded, including seidel positive wound leak, visually significant corneal edema, and intraocular lens decentration. Patient reports of subjective eye pain were also captured. For POM1, CDVA and final manifest refraction (MRx, spherical equivalent) with calculated deviation from preoperative target refraction were obtained. At this time, any postoperative complications including cystoid macular edema (CME), persistent corneal edema, and persistent or recurrent anterior chamber inflammation were noted. The total number of in-person visits required for preoperative evaluation (including a separate visit, if necessary, for biometry), COVID testing prior to surgery (one for ISBCS, two for DSBCS), surgery itself (one for ISBCS, two for DSBCS), and postoperative visits through POM1 were summed.

Patient satisfaction was determined after the POM1 visit. A member of the research staff contacted patients via telephone to query their overall satisfaction with surgery and responses to the visual functioning index VF-7 questionnaire and select items from the National Eye Institute Visual Function Questionnaire (VFQ-25).^[11,12] Respondents who underwent ISBCS were also asked if they would have preferred DSBCS over ISBCS. The six senior residents who were on the Comprehensive Ophthalmology service during the study time period were surveyed to explore surgeon perspectives toward ISBCS, including preference for ISBCS over DSBCS.

Statistical analysis

All analyses were performed using R version 4.0 with RStudio,^[13] an open-source tool and user interface for statistical computing. Tests of association were conducted for each variable using the independent Student's *t*-test or Wilcoxon rank sums test for means and Fisher's exact test for proportions to compare ISBCS and DSBCS patients. For ISBCS patients with one eye operated on by the resident and one by the attending, only the resident-performed eye was included in the final analysis. Values of $P < 0.05$ were considered statistically significant.

Results

Twenty-two eyes from 14 patients underwent senior resident-performed ISBCS during May through September 2020. Of these, senior residents performed the surgeries in both eyes of eight patients (16 resident-operated eyes) and in one eye of six patients (6 resident-operated eyes, with the contralateral eye undergoing same-day surgery by the supervising attending). Twenty-eight patients (56 eyes) underwent senior resident-performed DSBCS during that same time period. Table 1 shows baseline characteristics of ISBCS and DSBCS patients. The two groups were similar in the distribution of age, sex, and race/ethnicity. Preoperative data is also shown in Table 1. DSBCS eyes had slightly better preoperative CDVA (approximately one Snellen line), though not statistically different compared to ISBCS eyes ($P = 0.148$). The remainder of the preoperative exam, including biometry measurements, were similar between the two groups.

Surgery for the second eye in DSBCS patients was conducted 1–3 weeks after the first eye. All patients underwent monitored anesthesia care and received intracameral antibiotics. ISBCS eyes were more likely to receive topical anesthesia, as subtenon's block would necessitate patching in one or both eyes on the same surgical day, whereas DSBCS eyes were more likely to receive a subtenon's block ($P < 0.001$). There was no significant difference in intraoperative complication rates between ISBCS and DSBCS patients [Table 2]. The total procedural time from procedure start to procedure finish was not statistically different between ISBCS and DSBCS cases ($P = 0.169$).

Postoperative outcomes are presented in Table 3. On POD1, average IOP was similar between the two groups, with only two DSBCS eyes with IOP greater than 30 that resolved by POW1 with topical drops. The majority of eyes had no concerning POD1 exam findings (77% ISBCS and 84% DSBCS, $P = 0.206$). Two DSBCS eyes had small wound leaks, three ISBCS and seven DSBCS eyes had visually significant central corneal edema, one ISBCS eye had a corneal abrasion, and one ISBCS eye had an endothelial plaque in the visual axis. The majority of patients reported no subjective pain on POD1 in both groups.

The average number of in-office and operative visits related to cataract surgery was 5.9 in the ISBCS group versus 9.5 in the DSBCS group ($P < 0.001$). All ISBCS patients had a routine POM1 visit except one patient who developed CME in both eyes (9.1%), which resolved with a course of topical nonsteroidal antiinflammatory agent (NSAID). Seven eyes of six DSBCS patients (12.5%) required an increase in frequency of topical steroid drops between the POW1 and POM1 visits for persistent/recurrent corneal edema or anterior chamber inflammation (three eyes), CME (three eyes, with the addition

Table 1: Baseline Characteristics and Preoperative Exam

	Type of Bilateral Cataract Surgery		P
	Immediate (n=14 patients)	Delayed (n=28 patients)	
Age, years (mean±SD)	69.6±8.7	71.6±10.5	0.511
Sex (n, %)			1.000
Female	8 (57.1)	17 (60.7)	
Male	6 (42.9)	11 (39.3)	
Race (n, %)			0.362
Caucasian	6 (42.9)	12 (42.9)	
Asian/Pacific Islander	5 (35.7)	9 (32.1)	
African American	0 (0)	2 (7.1)	
Other/Unknown	3 (21.4)	5 (17.9)	
	Immediate (n=22 eyes)	Delayed (n=56 eyes)	
CDVA, logMAR (mean±SD)	0.361±0.278	0.282±0.270	0.148
IOP (mean±SD)	16.2±3.2	15.8±3.7	0.676
Type of cataract (n, %)			0.578
Nuclear sclerosis	5 (22.7)	16 (28.6)	
Cortical	0 (0)	3 (5.4)	
Mixed	17 (77.3)	37 (66.1)	
Axial length, mm (mean±SD)	24.2±1.6	24.3±2.3	0.670
ACD, mm (mean±SD)	3.17±0.43	3.17±0.55	0.219
LT, mm (mean±SD)	4.38±0.41	4.50±0.48	0.270
ΔK, D (mean±SD)	0.86±0.53	0.82±0.60	0.586

* $P < 0.05$ considered statistically significant. ACD=Anterior chamber depth, CDVA=Corrected distance visual acuity, IOP=Intraocular pressure, LT=lens thickness

Table 2: Surgical Data

	Type of Bilateral Cataract Surgery		P
	Immediate (n=14 patients)	Delayed (n=28 patients)	
Total procedural time, min (mean±SD) [†]	88.2±18.6	79.3±20.7	0.169
	Immediate (n=22 eyes)	Delayed (n=56 eyes)	
Surgical anesthesia (n, %)			<0.001*
Topical	15 (68.2)	8 (14.3)	
Subtenons	7 (31.8)	48 (85.7)	
Intraocular lens type (n, %)			1.000
Monofocal	18 (81.8)	43 (76.8)	
Toric	4 (18.2)	11 (19.6)	
Multifocal	0 (0)	2 (3.6)	
Intraoperative complications (n, %)	0 (0)	1 (1.8) [‡]	1.000

* $P < 0.05$ considered statistically significant. [†]Total procedural time is per patient (not per eye): in immediate sequential bilateral cataract surgery, this includes turnover time in between eyes (room clean, reprep and redrape the second eye); in delayed sequential bilateral cataract surgery, this is the sum of the individual procedural times for each eye. [‡]A small iridodialysis occurring in the first eye in this delayed sequential bilateral cataract surgery patient

of a topical NSAID), or retained cortical remnant (one eye). There was no statistically significant difference between postoperative complications in ISBCS compared to DSBCS eyes ($P = 1.000$).

Final CDVA was 20/25 or better in 95% ISBCS eyes and 91% DSBCS eyes, with no statistically significant difference between the two groups ($P = 0.670$). Finally, the deviation of final MRx from target refraction, as specified at the preoperative visit, was within 0.50 D in 77% ISBCS eyes and 84% DSBCS eyes ($P = 0.522$).

All patients responded to the patient satisfaction survey except for one patient in the ISBCS group and five patients in the DSBCS group, who could not be reached by telephone despite multiple attempts [Table 4]. Patients expressed high satisfaction with their cataract surgery experience and final visual outcomes, with 92% ISBCS patients and 70% DSBCS patients being overall "very satisfied" ($P = 0.213$). Of the ISBCS patients, only one stated that they would have preferred having two separate surgeries over same-day bilateral surgeries. After

Table 3: Postoperative Results

	Type of Bilateral Cataract Surgery		P
	Immediate (n=14 patients)	Delayed (n=28 patients)	
Total number of visits [†] (mean±SD)	5.93±0.83	9.50±1.07	<0.001*
	Immediate (n=22 eyes)	Delayed (n=56 eyes)	
POD1 IOP (mean±SD)	17.5±5.3	18.0±5.8	0.676
POD1 IOP>30 (n, %)	0 (0)	2 (3.6)	1.000
POD1 exam findings (n, %)			0.206
Normal postoperative exam	17 (77.3)	47 (83.9)	
Wound leak (seidel positive)	0 (0)	2 (3.6)	
Visually significant corneal edema	3 (13.6)	7 (12.5)	
Other	2 (9.1) [‡]	0 (0)	
POD1 pain (n, %)	2 (9.1)	5 (8.9)	1.000
Postoperative complications (n, %)	2 (9.1)	7 (12.5)	1.000
CME	2 (9.1)	3 (5.4)	
Persistent corneal edema	0 (0)	1 (1.8)	
Persistent/recurrent AC inflammation	0 (0)	2 (3.6)	
Other	0 (0)	1 (1.8) [§]	
POM1 CDVA, Snellen (n, %)			0.670
20/25 or better	21 (95.5)	51 (91.1)	
Worse than 20/25	1 (4.5)	5 (8.9) [†]	
Deviation of final MRx from target (n, %)			0.522
0.00 to 0.50	17 (77.3)	47 (83.9)	
>0.50	5 (22.7)	9 (16.1)	

*P<0.05 considered statistically significant. [†]Includes all preoperative, surgical, and postoperative visits. [‡]1 eye had a corneal abrasion and 1 eye had an endothelial plaque in visual axis. [§]1 eye was found to have a cortical remnant behind the IOL at the POW1 visit. ^{||}final CDVA of 20/30. [†]Three eyes had final CDVA of 20/30 and two eyes had final CDVA of 20/40. AC=Anterior chamber, CDVA=Corrected distance visual acuity, CME=Cystoid macular edema, IOP=Intraocular pressure, MRx=Manifest refraction, POD1=Postoperative day 1, POM1=Postoperative month 1, and POW1=Postoperative week 1

Table 4: Patient Survey Results

	Type of Bilateral Cataract Surgery		P
	Immediate (n=13) [†]	Delayed (n=23) [†]	
Overall satisfaction (n, %)			0.701
Very satisfied	12 (92.3)	16 (69.6)	
Satisfied	1 (7.7)	4 (17.4)	
Neither satisfied nor unsatisfied	0 (0)	2 (8.7)	
Unsatisfied	0 (0)	1 (4.3)	
Very unsatisfied	0 (0)	0 (0)	
VFQ25: Overall vision (n, %)			0.341
Excellent	10 (76.9)	13 (56.5)	
Good	3 (23.1)	6 (26.1)	
Fair	0 (0)	4 (17.4)	
Poor	0 (0)	0 (0)	
Very poor	0 (0)	0 (0)	
VFQ25: Eye pain (n, %)			0.390
None	7 (53.8)	11 (47.8)	
Mild	2 (15.4)	8 (34.8)	
Moderate	4 (30.8)	4 (17.4)	
Severe	0 (0)	0 (0)	
Very severe	0 (0)	0 (0)	
VF7 overall score (mean±SD)	94.7±6.0	93.2±9.2	0.561

*P<0.05 considered statistically significant. [†]Unable to reach one immediate sequential patient and five delayed sequential patients for survey. VF7=Visual function 7 index, VFQ-25=National Eye Institute Visual Function Questionnaire

the POM1 clinic visit, ISBCS patients were more likely to report having "excellent" overall eyesight compared to DSBCS patients

(77% vs 57%), though this did not reach statistical significance. The two groups responded similarly regarding eye pain and

on all VF7 questionnaire items, with the exception of the last question (“Do you have any difficulty, even with glasses, doing fine handwork such as sewing, knitting, or carpentry?”), in which almost half of DSBCS patients responded “not applicable” as compared to <10% of ISBCS patients (Supplemental Table 1). The overall VF7 scores were similarly high in both groups at 94.7 points (ISBCS) and 93.2 points (DSBCS), where 0 indicates the worst possible functional impairment and 100 indicates no disability ($P = 0.561$). The six senior residents who performed the ISBCS cases included in this study reported that bilateral same-day surgery was not more stressful than the more established training practice of operating on separate days for each eye. Five of the six senior residents also stated that they preferred ISBCS over DSBCS.

Discussion

Previous studies have demonstrated the cost savings of ISBCS over DSBCS,^[6,7] as well as patient preferences for the former.^[2,5] The unexpected occurrence of the COVID-19 pandemic has made these benefits of ISBCS all the more apparent. In our study, ISBCS patients on average saved more than three trips to the hospital compared to DSBCS patients. This is due to the additional operative day and POD1 clinic visit for the second eye, as well as an additional preoperative visit for some DSBCS patients. Furthermore, given the institutional requirement of testing negative for COVID-19 prior to all surgical procedures, DSBCS patients underwent two tests compared to only one for ISBCS patients.

Not only does ISBCS support patient safety by limiting exposure to medical professionals and the healthcare environment, it is also more convenient for our older and more vulnerable cataract patient population. Each fewer visit reduces the challenges involved in arranging perioperative transportation and family assistance during the era of social distancing and shelter-in-place. Finally, ISBCS also leads to economical savings from healthcare-related and non-healthcare-related costs. Aside from the notable reduction in overhead costs with a single surgery, the difference in lost productivity from surgical recovery in the patients and/or their family caregivers is significant between ISBCS and DSBCS.^[6,7]

In addition to these benefits, our study demonstrates that there is no significant difference between the final CDVA in patients undergoing senior resident-performed ISBCS as compared to DSBCS [Table 3]. This is consistent with results from a large, randomized clinical trial and another large, retrospective study, both of which evaluated patients undergoing bilateral cataract surgeries performed by experienced attending surgeons.^[4,14] Furthermore, Herrinton *et al.* concluded that the final refractive errors (spherical equivalent) were comparable with both ISBCS and DSBCS.^[4] We did not directly compare final refractive error outcomes in our study as some patients preferred near targets while others opted for distance targets. However, our results show that the average final MRx (spherical equivalent) in patients undergoing ISBCS was within 0.36 D of the target refraction, with 77% within 0.50 D of the target refraction, similar to the DSBCS group ($P = 0.522$, Table 3). These results are supported by findings from the Helsinki Simultaneous Bilateral Cataract Surgery Study, in which 67 and 69% of patients in the attending-performed ISBCS and DSBCS groups, respectively, had a final refractive error within 0.50 D of the target refraction.^[3]

Patient selection is of the utmost importance when performing ISBCS. Previous studies emphasize excluding patients who have had prior keratorefractive surgery and those with extremes of axial length due to reduced predictive accuracy of current intraocular lens formulas. In addition, patients with ocular or systemic comorbidities that can predispose to corneal edema and endophthalmitis (such as Fuchs dystrophy, active adnexal or ocular surface infection, and immunosuppression), complex traumatic cataracts, or diabetic retinopathy with macular edema should be excluded.^[2,3,5,14] Furthermore, cognitive or behavioral impairments precluding the use of topical anesthesia in at least one eye are a relative contraindication to ISBCS, as bilateral subtenon’s anesthesia would necessitate bilateral patching after surgery. While there are no formal patient selection criteria available for ISBCS, following the guidelines from existing studies can help minimize unexpected surgical complications and outcomes.

Our intraoperative complication rates for all senior resident-performed cataract surgeries were low [Table 2]. There was only one intraoperative complication, a small iridodialysis which occurred in the first eye of one DSBCS patient (1.3%). There was no lasting impact on pupillary function or visual outcome (final CDVA 20/20). In comparison, Herrinton *et al.*^[4] reported complication rates of 0.93 and 0.88% and Serrano-Aguilar *et al.*^[14] reported 0.24 and 0.13% in their ISBCS and DSBCS groups, respectively. The higher proportions of intraoperative complications reported in this study are likely due to our smaller sample size, the principal limitation of this study, which skews the data toward individual complications. In addition, we were specifically interested in resident-performed cataract surgeries, which carries a known but still acceptable increased risk of complications.^[15-17] Briszi *et al.*^[15] found an intraoperative complication rate of 3.8% among 600 resident-performed cataract surgeries, with the most common complications being posterior capsular tear, vitreous loss, and dislocation of lenticular fragments in the vitreous, none of which were observed in our series of patients. However, their study included residents at various stages of their training, whereas our study focused only on senior resident-performed cases.

As expected, postoperative complication rates were higher among cases performed by senior residents at the beginning of the academic year (17.6% in July–September) as compared to the end of the year, reflecting an increase in surgical experience (6.8% in May–June), though this did not reach statistical significance ($P = 0.167$). Overall postoperative complication rates were 9.1% in the ISBCS group and 12.5% in the DSBCS group. In comparison, Sarikkola *et al.*^[3] reported 6.4 and 6.0% postoperative complication rates at 1 month in their ISBCS and DSBCS groups, respectively. Again, our small sample size as well as resident-performed surgeries both contribute to the higher complication rates. One patient in each group developed bilateral CME and one DSBCS patient developed unilateral CME, the most common cause of decreased postoperative visual acuity following cataract surgery.^[18,19] Though the ISBCS patient did not have any surgical complications predisposing to pseudophakic CME, she did have a history of diabetes without retinopathy, a known risk factor for developing pseudophakic CME.^[20] The DSBCS patients did not have any known risk factors for CME. Fortunately, the bilateral CME cases responded

well to topical nonsteroidal antiinflammatory drops and steroids with final CDVA at 20/20 in all eyes. The patient with unilateral CME has not been able to return for a final visual acuity check and refraction as she subsequently underwent an orthopedic procedure; her CDVA at the POM1 visit was 20/40 in the eye with CME. Notably, there were no cases of bilateral endophthalmitis in our study, one of the main concerns of ISBCS, which is consistent with previous reports in patients who received intracameral antibiotics.^[21]

Of the six senior residents who performed ISBCS during the period of this study, five responded that they preferred ISBCS over DSBCS, in part due to greater surgeon and patient convenience with fewer pre- and postoperative visits while maintaining surgical volume. The latter is of particular interest for residents during the COVID-19 pandemic given freezes or reductions in operating room schedules that otherwise compromise surgical numbers. Logistically, operating bilaterally at once versus in sequence eliminates the risk of being unable to complete the second eye because of issues in COVID testing, transportation arrangements, or case scheduling. Thus, offering resident-performed ISBCS to select patients allows senior residents to maintain their surgical volume despite these unique hurdles in the pandemic, providing yet another benefit to ISBCS.

Conclusion

In conclusion, though the cohort of this pilot study was small, the results are still timely and informative during the COVID-19 pandemic. Importantly, ISBCS patients were equally as satisfied with their cataract surgery experience and final visual results as DSBCS patients. Our results with senior resident-performed ISBCS are consistent with the previously reported high patient satisfaction and excellent visual rehabilitation seen with experienced attending-performed ISBCS.^[3,14] Additionally, most senior residents who participated in ISBCS preferred it over DSBCS. Thus, ISBCS is a critical means by which surgical volume can be maintained without increasing patient risk and exposure in the healthcare environment. Future studies with larger cohorts will be needed to confirm our preliminary results, assess safety, and further explore the impact on resident surgical education.

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Conflicts of interest

There are no conflicts of interest.

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Supplemental Table 1: Visual Function Index (VF7) Survey Results

	Type of Bilateral Cataract Surgery		P
	Immediate (n=13) [†]	Delayed (n=23) [†]	
VF7-1 (n, %) [‡]			0.302
No difficulty	4 (30.8)	3 (13.0)	
A little difficulty	2 (15.4)	1 (4.3)	
A moderate amount of difficulty	1 (7.7)	2 (8.7)	
Not applicable	6 (46.2)	17 (73.9)	
VF7-2 (n, %) [§]			0.754
No difficulty	9 (69.2)	12 (52.2)	
A little difficulty	2 (15.4)	7 (30.4)	
A moderate amount of difficulty	2 (15.4)	3 (13.0)	
Unable to perform the activity	0 (0)	1 (4.3)	
VF7-3 (n, %)			0.138
No difficulty	10 (76.9)	19 (82.6)	
A little difficulty	3 (23.1)	1 (4.3)	
A moderate amount of difficulty	0 (0)	3 (13.0)	
VF7-4 (n, %) [¶]			1.000
No difficulty	13 (100)	22 (95.7)	
A little difficulty	0 (0)	1 (4.3)	
VF7-5 (n, %)			0.756
No difficulty	11 (84.6)	20 (87.0)	
A little difficulty	2 (15.4)	2 (8.7)	
A moderate amount of difficulty	0 (0)	1 (4.3)	
VF7-6 (n, %) ^{**}			1.000
No difficulty	13 (100)	22 (95.7)	
Not applicable	0 (0)	1 (6.7)	
VF7-7 (n, %) [‡]			0.008*
No difficulty	9 (69.2)	11 (47.8)	
A little difficulty	3 (23.1)	0 (0)	
A moderate amount of difficulty	0 (0)	1 (4.3)	
Not applicable	1 (7.7)	11 (47.8)	

*P<0.05 considered statistically significant. [†]Unable to reach one immediate sequential patient and five delayed sequential patients for survey. [‡]No patient selected "A great deal of difficulty" or "Unable to perform the activity". [§]No patient selected "A great deal of difficulty" or "Not applicable". ^{||}No patient selected "A great deal of difficulty," "Unable to perform the activity," or "Not applicable". [¶]No patient selected "A great deal of difficulty," "A moderate amount of difficulty," "Unable to perform the activity," or "Not applicable". ^{**}No patient selected "A great deal of difficulty," "A moderate amount of difficulty," "A little difficulty," or "Unable to perform the activity". VF7-1=How much difficulty do you have driving at night because of your vision?, VF-2=Do you have any difficulty, even with glasses, reading small print, such as labels on medicine bottles, a telephone book, or food labels?, VF-3=Do you have any difficulty, even with glasses, watching television?, VF-4=Do you have any difficulty, even with glasses, seeing steps, stairs, or curbs?, VF-5=Do you have any difficulty, even with glasses, reading traffic signs, street signs, or store signs?, VF-6=Do you have any difficulty, even with glasses, cooking?, VF-7=Do you have any difficulty, even with glasses, doing fine handwork such as sewing, knitting, or carpentry?