

# Immediate sequential bilateral cataract surgery and its relevance in COVID-19 era

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Immediately sequential bilateral cataract surgery (ISBCS) involves performing phacoemulsification with intraocular lens implantation in both the eyes of a patient, sequentially in the same operative sitting. There are well-documented advantages in terms of quicker visual rehabilitation and reduced costs. The risk of bilateral simultaneous endophthalmitis and bilateral blindness is now recognized to be minuscule with the advent of intracameral antibiotics and modern management of endophthalmitis. Refractive surprises are rare for normal eyes and with the use of optical biometry. As a result of the COVID-19 pandemic, all elective surgeries were stopped. This has resulted in a large backlog of deferred cataract surgeries. Now more than ever before, we should consider ISBCS as an excellent alternative to delayed sequential bilateral cataract surgery in the right hospital or surgical setting. In the age of COVID-19, it can help to decrease surgical scheduling and follow-up visits. The one change in practice that could have the most significant benefit in reducing infection exposure risk is ISBCS.

**Key words:** Bilateral cataract surgery, COVID-19, ISBCS, SBSC

Delayed sequential bilateral cataract surgery (DSBCS) is the accepted and standard of care practice in routine bilateral cataract removal. The emergence of COVID-19 pandemic is requiring the creation of new paradigms of ophthalmic care. Immediate sequential bilateral cataract Surgery (ISBCS) is one of the new paradigms that would decrease the number of visits for surgery and follow-up. ISBCS results in half as many operating rooms (ORs) and office appointments when compared with traditional DSBCS. ISBCS requires less personal protective equipment for staff, results in lower clinic costs, and leads to a less crowded OPD, OR, and waiting room and also the patient requires a single COVID test.

More recently, surgeons have considered performing ISBCS in patients with a higher risk for anesthesia complications.<sup>[1]</sup> These include patients who require general anesthesia or in those with a left ventricular assist device who require special monitoring during surgical procedures. In these patients, most would agree the risk of morbidity or mortality from anesthesia outweighs the risks of cataract surgery.<sup>[2]</sup> It also remains a common procedure in infants with bilateral congenital cataracts.<sup>[3]</sup> The procedure has gained adherents around the world, especially in Europe and Japan,<sup>[4]</sup> but it is not widely accepted. Perhaps now is a good time to consider the incorporation of ISBCS as a practical strategy to reduce surgical encounters and follow-up visits and to discuss how we can perform it effectively and with the least risk.

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## Background

One of the earliest scientific reports of simultaneous binocular cataract in one operating session comes from 1952.<sup>[5]</sup> Initially, this applied to ICCE operations. Over the years, surgical techniques were refined and supporters of ISBCS appeared. ISBCS began to become common with the advent of small-incision phacoemulsification, although there are some places that do it with manual small incision cataract surgery now as well. In Poland, even though there are a few surgeons who operate simultaneously both eyes, there are few documented cases of such operations. In the identified publications, we discovered that in the period from January to December 1985, 48 operations by cryoextraction were performed, and from March to June 1999, three treatments of ISBCS were performed,<sup>[6,7]</sup> all due to the health of the patients requiring surgery under general anesthesia. The operation of each eye was treated as a separate procedure, and all were run under strict aseptic conditions. In none of these cases, there were early or late postoperative period complications observed. In 2009, 10% of responding members of the ESCRS were performing ISBCS.<sup>[8,9]</sup>

## Review of Bilateral Cataract Surgery

The leading country for the proportion of ISBCS done is Finland. Routine ISBCS has been common there since 1996, and many hospitals currently perform ISBCS on 40–60% of cataract

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patients.<sup>[8,10]</sup> Spain's region of the Canary Islands performs 80% of all cataract surgeries in this way with explicit government approval, which recently concluded that "ISBCS, as a surgical alternative for cataract patients, is as safe and effective as conventional DSBCS."<sup>[11]</sup> In the Canadian province of Ontario, ISBCS has increased from 1.02% of total cataract surgeries in 2003/2004 to 2.36% in 2009/2010, with a 40% increase in total provincial cataract surgical volume over the same period. Thus, there has been a consistent increase in the performance of ISBCS in Ontario, over the 7 years from 2003 to 2010, a pattern similar to what is currently seen worldwide.

A 5 year retrospective analysis of 2470 eyes undergone ISBCS in South India, showed none of the eyes developed endophthalmitis (unilateral or bilateral), which could be attributed to a meticulous case selection (excluding cases with a high risk of infection), thorough intraoperative asepsis protocols followed, and skilfully performed surgery.<sup>[12]</sup>

### ISBCS guidelines

The current cataract surgery guidelines published by the International Society of Bilateral Cataract Surgeon (iSBSCS), the Royal College of Ophthalmologists, and Canadian ophthalmological society (2020) support the use of ISBCS.<sup>[13-15]</sup> The ISBCS guidelines endorse the use of the simultaneous technique by the experienced cataract surgeon with an excellent safety record at an institution and low complication rates.<sup>[13,14]</sup> Key to the success of the procedure is that each eye's operation must be treated as a separate and individual surgery with separate sterilization cycles/routines and instrument trays. The patient's eyes are not patched postsurgery, but rather, topical eye drops are provided immediately after the procedure in high doses and tapered off during the recovery period. The Royal College of Ophthalmologists in London takes a similar approach to performing ISBCS as two individual surgeries.<sup>[14]</sup> A careful patient selection process is necessary to determine eligibility for ISBCS.<sup>[14,16]</sup>

### Patient selection

It is important that ophthalmologists abide by strict patient exclusion criteria to reduce the risk of surgical complications and ensure the best outcomes with ISBCS.<sup>[4,17]</sup> The indication of ISBCS are bilateral cataract in mentally retarded patients, pediatric, patients with cardiac, and other comorbidities. Patients should be excluded if they have an increased risk of infection, corneal decompensation, inaccurate biometry, lenticular abnormalities, and high intraocular pressure or if they have a unilateral cataract.<sup>[4,17]</sup> Ocular comorbidities must be managed appropriately prior to surgery and considered very carefully prior to determining patient eligibility at the discretion of the experienced cataract surgeon.<sup>[13]</sup> The literature suggests that between one-half and two-thirds of cataract patients may be eligible for ISBCS.<sup>[18]</sup> The Royal College of Ophthalmologists supports ISBCS indications for patients who require general anesthesia, including those with a disability that prevents them from being fully assessed prior to surgery.<sup>[14]</sup> A US study found that ISBCS could have consisted of 48.2% of all cataract surgery cases.<sup>[19]</sup>

### Benefits

As with DSBCS, ISBCS results in improved visual function for the patient, but ISBCS has additional benefits.<sup>[18]</sup> These include quick rehabilitation, the need for only one pair of eyeglasses,

fewer hospital/clinic visits, no need for anisometropia between surgeries, and only one application for those requiring general anesthesia. Patient satisfaction is also initially higher with ISBCS, given the shorter visual rehabilitation time.<sup>[17]</sup> However, at 1-year follow-up (and after DSBCS patients had both eyes done), there was no difference in patient satisfaction between groups. For both patients and their families, friends, or caretakers, who might accompany them to the surgery, less time is required and transportation logistics are easier when surgeries for bilateral cataract are scheduled together.<sup>[18]</sup> The hospital or clinic benefits from increased efficiency and time and resource savings with ISBCS. Only one preassessment and admission per patient is required, and the clinic and OR are used more efficiently.<sup>[18]</sup>

### The cost savings and cost-effectiveness of ISBCS

Numerous studies have proven ISBCS to be more cost-effective with greater cost savings than DSBCS for patients and their families/caregivers and for the hospital and the healthcare system.<sup>[19-21]</sup> DSBCS cost the hospital \$1566.30, which was significantly more than the \$1059.10 needed for ISBCS ( $P < 0.0001$ ). Cataract surgery volume and eligibility estimates, 2012 Medicare reimbursement schedules, and patient cost data for Western Tennessee (TN) and the whole USA were used to create a model to compare costs between surgical methods.<sup>[19]</sup> The authors estimated a national Medicare savings of US\$522 million in 2012 if the healthcare system had switched to ISBCS.<sup>[19]</sup>

### Risks and disadvantages of ISBCS

Aside from the financial disincentive facing many ophthalmologists, the primary risks of ISBCS involve surgical complications.<sup>[15]</sup> Complications during the first-eye operation will need to first be addressed prior to operating on the second eye, thereby resulting in DSBCS.<sup>[13,18]</sup> The risk of bilateral postsurgical complications is more serious with ISBCS because bilateral complications, such as endophthalmitis, can result in functional blindness.<sup>[18]</sup> It is precisely this risk of bilateral endophthalmitis that is the most common reason that ophthalmologists do not perform ISBCS.<sup>[8]</sup> The ESCRS study found that the risk for contracting postoperative endophthalmitis was significantly reduced, approximately 5-fold, by an intracameral injection of 1 mg cefuroxime at the close of surgery ( $P = 0.001$  for presumed endophthalmitis;  $P = 0.005$  for proven endophthalmitis).<sup>[22]</sup> Among the four ESCRS study groups, the lowest incidence rate was observed in Group D, where both intracameral cefuroxime and perioperative topical levofloxacin were used. This rate was 0.049% for presumed endophthalmitis and 0.025% for proven endophthalmitis.<sup>[22]</sup> Routine intracameral moxifloxacin prophylaxis achieved a highly significant, 4-fold reduction in postoperative endophthalmitis in patients undergoing M-SICS.<sup>[23]</sup>

Other risks to the patient include a longer recovery period due to cystoid macular edema, prolonged corneal edema, or anterior chamber inflammation.<sup>[24]</sup> Stereopsis is disrupted during the time between the two cataract surgeries, when the eye continues to function monocularly, patients lose depth perception. There is also the risk of decreased satisfaction resulting from the lack of a reliable method to determine which IOL is preferred and tolerated by the patient prior to the first-eye operation. As such, with ISBCS, the inability to

tailor the IOL choice, as well as the IOL power for the second eye, is a disadvantage, with the latter issue highly debatable concerning ISBCS and worthy of further discussion.<sup>[24]</sup>

### Refractive results

In DSBCS, the refractive results in a patient's first operated eye are analyzed and, if a refractive surprise presents, calculations for the second eye are adjusted. Critics note that this adjustment is not possible in ISBCS, and a residual ametropia in one of the eyes can result in anisometropia. This is true, but only partially. Studies show that if modern diagnostic tools such as those for early detection of tear film abnormalities are used, if the best current technology like IOL master 700, lenstar along with latest generation IOL formulas (Barrett universal II, Hill-RBF) power is used, and if an intraoperative aberrometry system is employed, results similar to those obtained with DSBCS can be achieved.<sup>[25,26]</sup>

### ISBCS in times of COVID-19

Literature increasingly supports the use of ISBCS for its benefits in providing faster rehabilitation, improved visual outcomes, and cost and time savings. ISBCS studies have primarily focused on the most important risk of the procedure: bilateral endophthalmitis. In spite of the fact that endophthalmitis is the main reason ophthalmologists opt out of offering ISBCS, there have been only four cases of bilateral endophthalmitis

resulting from ISBCS ever published, all of which breached iSBCS protocol.<sup>[13,27]</sup> As a corollary, if ISBCS protocol is not breached, probability of risk of endophthalmitis is almost nil. In a large case series of 319 patients in the UK who underwent ISBCS, there were no serious bilateral complications and no cases of bilateral endophthalmitis, and only one eye (0.15%) had endophthalmitis.<sup>[28]</sup> Arshinoff and Bastianelli 14 collected data of 125,188 cataract surgeries, including 95,606 ISBCS procedures, from 30 centers worldwide and from members of the iSBCS to estimate the incidence of post-ISBCS endophthalmitis and evaluate the benefit of prophylactic intracameral antibiotics. There were no cases of bilateral endophthalmitis resulting from ISBCS. The incidence of endophthalmitis after ISBCS was only 1 in 5759 cases, which was reduced to 1 in 14,352 cases when intracameral antibiotics were used. In fact, it has been estimated that if a higher endophthalmitis rate of 0.1% were assumed, 1 million cataract surgeries would have to be carried out by an ophthalmologist before two eyes would become infected sequentially.<sup>[18]</sup>

There was no evidence for differences in the rates of PCR or vitrectomy between ISBCS and DSBCS. This is consistent with past reports.<sup>[10,29]</sup> Many surgeons who perform ISBCS abort surgery for the second eye when PCR occurs in the first in order to give the eye and the patient time to heal. For this reason, we recommend obtaining the patient's agreement on

**Table 1: List of previous publications on ISBCS**

Authors	Year	B/L endophthalmitis	U/L endophthalmitis	Post capsular rent (PCR)	Retinal detachment (RD)	No. of eyes
Joseph <i>et al.</i>	1977	0	3 (0.22%)	130 (9.6%)	2 (0.15%)	1352
Benezera <i>et al.</i>	1978	2 (0.2%)	1 (0.1%)	14 (2.0%)	2 (0.2%)	448
Fenton <i>et al.</i>	1982	0	0	NA	0	500
Beatty <i>et al.</i>	1995	0	1 (0.15%)	5 (0.8%)	0	638
Bolger <i>et al.</i>	1998	0	2 (0.28%)	10 (1.9%)	0	700
Arshinoff <i>et al.</i>	1998	0	0	2 (0.69%)	0	600
Ramsay <i>et al.</i>	1999	0	1 (0.19%)	0	1 (0.2%)	518
Totan <i>et al.</i>	2000	0	0	NA	0	82
Tarun <i>et al.</i>	2001	0	0	3 (0.15%)	0	288
Wertheim <i>et al.</i>	2002	0	0	3 (0.7%)	0	218
Kotkaren <i>et al.</i>	2002	0	2 (0.07%)	4 (0.14%)	0	2715
Arshinoff <i>et al.</i>	2003	0	0	30 (1.47%)	4 (0.2%)	2040
Johansson <i>et al.</i>	2003	0	0	1 (0.7%)	0	440
Sarikkola <i>et al.</i>	2004	0	0	0	0	637
Lundstrom <i>et al.</i>	2006	0	0	0	0	100
TienEnhuang <i>et al.</i>	2007	0	0	NA	0	54
Nassiri <i>et al.</i>	2009	0	0	NA	0	140
Chung <i>et al.</i>	2009	0	0	NA	0	168
Petros <i>et al.</i>	2011	0	0	NA	0	2129
Sarikkola <i>et al.</i>	2011	0	0	NA	0	493
Pedro <i>et al.</i>	2012	0	0	NA	0	834
Sowbhagya <i>et al.</i>	2013	0	0	NA	0	166
Johansson <i>et al.</i>	2014	0	0	3 (0.7%)	0	328
Ganesh <i>et al.</i>	2016	0	0	11 (0.446%)	0	2470
Herrinton <i>et al.</i>	2017	0	1	6 (0.2%)	0	10494
Bhambhwani <i>et al.</i>	2020	0	0	0	0	37
Buchan <i>et al.</i>	2020	0	0	41 (1.9%)	0	2146

which eye is to be operated on first (generally the worse-seeing eye) and recording the agreement on the consent form that is signed by the patient. Table 1 shows previous publications along with their complication rates.

As a result of the COVID-19 pandemic, all elective surgeries were stopped. This has resulted in a large backlog of deferred cataract surgeries. Now more than ever before, we should consider ISBCS as an excellent alternative to DSBCS in the right hospital or surgical setting. In the age of COVID-19, it can help to decrease surgical scheduling and follow-up visits. However, each facility must analyze whether it has the aforementioned safety requirements in place and whether its surgeons have the necessary expertise to avoid complications that may represent an obstacle rather than a clear path to proper adoption. If these conditions are not met, then ISBCS should not be carried out.

### OT precautions to follow in ISBCS

For performing, ISBCS both eyes have to be considered as two separate independent cases. Complete aseptic separation of right (R) and left (L) procedures must be done. Two completely separate surgical trays, autoclaved independently with indicators, should be used for the two eyes, and the eye should be repped and draped for the second eye the same as for a different patient with the entire team changing their gowns and gloves and using new drapes and everything else. The risk of R–L errors can be minimized by listing all R–L parameters on a board or screen somewhere in the operating room visible to all and everybody passing the IOL to the surgical table should confirm the IOL choice. There should be no cross-over of instruments, drugs, or devices between the two trays for the two eyes at any time before or during the surgery of either eye. Intracameral antibiotics are strongly recommended for ISBCS. If a complication occurs in the first eye of a planned ISBCS and is not resolved completely, then it is advisable to defer the second eye surgery.

### Femtosecond laser-assisted cataract surgery (FLACS) and ISBCS

Femtosecond laser-assisted cataract surgery presents a few unique challenges with ISBCS that should be mentioned. In order to preserve the efficiency of ISBCS, one would generally be performing both laser portions back-to-back and then beginning the first intraocular portion, followed by the second intraocular portion. The concern with this protocol is the fact that the surgeon would be committed to performing the second surgery, even when a serious complication in the first intraocular portion would traditionally lead to a postponement of the second surgery. Another potential challenge is the delay from laser treatment on the second eye and the intraocular surgery on the second eye, which can result in progressive miosis that must be addressed. This can be most noticeable in patients with small preoperative pupil size or shallow anterior chambers.<sup>[30]</sup> More research is needed on this topic and ways to maintain safety protocols while utilizing the advantages of FLACS. Hence, the role of ISBCS by FLACS is debatable in current times.

### Conclusion

Currently, the most feared and substantial systemic risk during the pandemic era is COVID-19 exposure. After the initial consultation and diagnostic testing, ISBCS reduces the number of patient visits (including waiting) and contact

exposures. Avoiding exposure to other patients is critical for our elderly population with cataracts, who are more vulnerable to COVID-19 infection. Improvements in technology, approach, and aseptic technique have made ISBCS a low-risk, precise, and cost-effective procedure.

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### Conflicts of interest

There are no conflicts of interest.

### References

1. DelMonte DW. Immediately sequential bilateral cataract surgery: Is it time? *Cataract Refract* 2019;4:1-4.
2. Roberts TV, Li S. Management of bilateral cataracts when general anaesthesia is required: Same-day or different-day surgery? *Clin Exp Ophthalmol* 2017;45:767-9.
3. Mohammadpour M, Shaabani A, Sahraian A, Momenaei B, Tayebi F, Bayat R, *et al.* Updates on managements of pediatric cataract. *J Curr Ophthalmol* 2019;31:118-26.
4. Arshinoff SA, Odorcic S. Same-day sequential cataract surgery. *Curr Opin Ophthalmol* 2009;20:3-12.
5. Chan JO, De la Paz P. Bilateral cataract extraction in one sitting. *J Philipp Med Assoc* 1952;28:700-5.
6. Stankiewicz A, Zywałewski B, Andrzejewska-Buczowska J. One-time extraction of bilateral cataract. *Klin Oczna* 1987;89:414-5.
7. Synder A, Omulecki W. Simultaneous bilateral cataract surgery with PC IOL implantation. *Klin Oczna* 2002;104:96-8.
8. Arshinoff SA, Bastianelli PA. Incidence of postoperative endophthalmitis after immediate sequential bilateral cataract surgery. *J Cataract Refract Surg* 2011;37:2105-14.
9. Arshinoff SA. Same-day cataract surgery should be the standard of care for patients with bilateral visually significant cataract. *Surv Ophthalmol* 2012;57:574-9.
10. Sarikkola AU, Uusitalo RJ, Hellstedt T, Ess SL, Leivo T, Kivela T. Simultaneous bilateral versus sequential bilateral cataract surgery: Helsinki simultaneous bilateral cataract surgery study report 1. *J Cataract Refract Surg* 2011;37:992-1002.
11. Government of Spain publication. Seguridad, efectividad y coste efectividad de la cirugía de cataratas bilateral y simultánea frente a la cirugía bilateral de cataratas en dos tiempos. *Informes de Evaluación de Tecnologías Sanitarias SESC Núm. 2006/05.*
12. Ganesh S, Brar S, Sreenath R. Immediate sequential bilateral cataract surgery: A 5 year retrospective analysis of 2470 eyes from a tertiary care eye center in South India. *Indian J Ophthalmol* 2017;65:358-64.
13. International Society of Bilateral Cataract Surgeon (iSBSC). iSBSC General Principles for Excellence in ISBCS 2009. Spain: iSBSC; 2009.
14. The Royal College of Ophthalmologists. *Cataract Surgery Guidelines*. The Royal College of Ophthalmologists; 2010. [Last accessed on 2014 Oct 04].
15. Arshinoff S, Baig K, Holland S, Buys Y. Canadian Ophthalmological Society. Immediately Sequential Bilateral Cataract Surgery (ISBCS) - key points. 2020; [https://www.cosprc.ca/wp-content/uploads/2020/06/ISBCS\\_Guidance\\_June-3\\_FINAL\\_with-logo-2.pdf](https://www.cosprc.ca/wp-content/uploads/2020/06/ISBCS_Guidance_June-3_FINAL_with-logo-2.pdf). [Last accessed on 2021 May 01].
16. Rosen ES. Immediate sequential bilateral cataract surgery. *J Cataract Refract Surg* 2012;38:1707-8.
17. Serrano-Aguilar P, Ramallo-Fariña Y, Cabrera-Hernández JM, Perez-Silguero D, Perez-Silguero MA, Henríquez-de la Fe F, *et al.* Immediately sequential versus delayed sequential bilateral cataract surgery: Safety and effectiveness. *J Cataract Refract Surg* 2012;38:1734-42.

18. Smith GT, Liu CS. Is it time for a new attitude to 'simultaneous' bilateral cataract surgery? *Br J Ophthalmol* 2001;85:1489-96.
19. Neel ST. A cost-minimization analysis comparing immediate sequential cataract surgery and delayed sequential cataract surgery from the payer, patient, and societal perspectives in the United States. *JAMA Ophthalmol* 2014;132:1282-8.
20. Leivo T, Sarikkola AU, Uusitalo RJ, Hellstedt T, Ess SL, Kivelä T. Simultaneous bilateral cataract surgery: Economic analysis; Helsinki simultaneous bilateral cataract surgery study report 2. *J Cataract Refract Surg* 2011;37:1003-8.
21. Lundström M, Brege KG, Florén I, Roos P, Stenevi U, Thorburn W. Cataract surgery and effectiveness. 1. Variation in costs between different providers of cataract surgery. *Acta Ophthalmol Scand* 2000;78:335-9.
22. Barry P, Seal DV, Gettinby G, Less F, Peterson M, Revie CW; Endophthalmitis Study Group. ESCRS study of prophylaxis of postoperative endophthalmitis after cataract surgery: Preliminary report of principal results from a European multicenter study. *J Cataract Refract Surg* 2006;32:407-10.
23. Haripriya A, Chang DF, Namburur S, Smita A, Ravindran RD. Efficacy of Intracameral Moxifloxacin Endophthalmitis Prophylaxis at Aravind Eye Hospital. *Ophthalmology* 2016;123:302-8.
24. Henderson BA, Schneider J. Same-day cataract surgery should not be the standard of care for patients with bilateral visually significant cataract. *Surv Ophthalmol* 2012;57:580-3.
25. Woodcock MG, Lehmann R, Cionni RJ, Breen M, Scott MC. Intraoperative aberrometry versus standard preoperative biometry and a toric IOL calculator for bilateral toric IOL implantation with a femtosecond laser: One-month results. *J Cataract Refract Surg* 2016;42:817-25.
26. Herrinton LJ, Liu L, Alexeeff S, Carolan J, Shorstein NH. Immediate sequential vs. delayed sequential bilateral cataract surgery: Retrospective comparison of postoperative visual outcomes. *Ophthalmology* 2017;124:1126-35.
27. Arshinoff S. Bilateral endophthalmitis after simultaneous bilateral cataract surgery. *J Cataract Refract Surg* 2008;34:2006-8.
28. Beatty S, Aggarwal RK, David DB, Guarro M, Jones H, Pearce JL. Simultaneous bilateral cataract extraction in the UK. *Br J Ophthalmol* 1995;79:1111-4.
29. Serrano-Aguilar P, Ramallo-Farina Y, Cabrera-Hernandez JM, Perez-Silguero D, Perez-Silguero MA, Henríquez-de la Fe F, *et al.* Immediately sequential versus delayed sequential bilateral cataract surgery: Safety and effectiveness. *J Cataract Refractive Surg* 2012;38:1734-42.
30. Popiela MZ, Young-Zvandasara T, Nidamanuri P, Moore T, Leccisotti A, Kumar V. Factors influencing pupil behaviour during femtosecond laser assisted cataract surgery. *Cont Lens Anterior Eye* 2019;42:295-8.