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Bilateral Same-Day Cataract Surgery: An Idea Whose Time Has Come #COVID-19

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The coronavirus disease 2019 (COVID-19) pandemic shut down the world in the spring of 2020. With that, the delivery of healthcare dramatically changed, perhaps forever. The pandemic has led to the need to distance physically, to minimize nonessential exposure, to acquire appropriate personal protective equipment for both providers and patients, to enhance sanitization and hygiene practices, and to cope with the additional costs of doing so. This crisis has made us rethink the status quo and reframe age-old debates. Many of the abrupt changes made during the pandemic in the name of safety have resulted in a more immersive and connected patient experience. For these reasons, many of these measures likely will continue well past the end of this crisis.

Cataract surgeons have instituted many changes in practice during the COVID-19 pandemic. The move to more digitized and virtual healthcare delivery, online education tools, electronic intake, consolidating in-person visits, and increased spacing between patients have become the norm for cataract surgery. The one change in practice that could have the most significant benefit in reducing infection exposure risk is immediately sequential bilateral cataract surgery (ISBCS). Immediately sequential bilateral cataract surgery is less expensive, reduces personal protective equipment use, is more efficient, and provides faster binocular recovery of vision for the patient.¹

Immediately sequential bilateral cataract surgery has been debated for years, while the evidence in its support has grown over time.² Hospitals achieve higher productivity and cost savings of more than 30% when performing ISBCS instead of delayed sequential bilateral cataracts surgery (DSBCS).^{3–5} The new normal of the COVID-19 era requires extra spacing, cleaning, and time between patients, resulting in increased costs. When considering the additional patient costs for travel, family and caregiver time, and absence from work with the extra postoperative visits and recovery requirements of DSBCS, the cost efficiency is even greater with ISBCS.⁶

The principles of safe ISBCS have been laid out by the International Society of Bilateral Cataract Surgeons. They include treating each eye as a separate independent procedure with new instruments, packs, gloves, gowns, drapes, and different lot numbers for pharmaceuticals and viscoelastics. Intracameral antibiotics are recommended. Caution is suggested in those eyes with a higher risk of refractive surprises (prior refractive surgery, extreme axial lengths) and increased risk of complications because of ocular comorbidities. If a complication occurring in the first eye of

a planned ISBCS is unresolved at the time of surgery, it is advised to defer the second eye.

Opponents who argue against ISBCS do so on 2 clinical points: the risk of bilateral postoperative endophthalmitis or toxic anterior segment syndrome and second-eye refractive planning. However, no evidence substantiates these fears. No cases of bilateral endophthalmitis have occurred in which the proper aseptic technique had been followed, nor have any cases of bilateral toxic anterior segment syndrome been reported with ISBCS. In a series of 95 606 ISBCS surgeries, no cases of bilateral endophthalmitis occurred. The overall infection rate was 1 in 16 890 (0.006%) with the use of intracameral antibiotics.⁷ The theoretical risk of simultaneous bilateral postoperative endophthalmitis with proper aseptic technique is estimated to be less than 1 in 100 000 000.

Ocular risks must be compared with systemic risks, as rare as either may be. Anesthesia and traveling risks are doubled with DSBCS versus ISBCS. 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 by half. Avoiding exposure to other patients is critical for our elderly population with cataracts, whose risk of dying is higher with COVID-19 infection. In our opinion, this tips the safety balance further in favor of ISBCS.⁸

Much has been written about the fear of performing ISBCS because of a need to adjust the intraocular lens power for the second eye after checking the result of the first eye. These concerns have been negated in the modern era of intraocular lens calculations, excluding patients with risk factors for refractive surprises. In addition, optimizing the ocular surface before surgery, using the latest optical biometers, applying validation criteria, and using the latest generation formulas, such as the Barrett Universal II, Hill-radial basis function, Olsen, and Kane methods, would be useful for enhancing refractive outcomes. Furthermore, adjusting the second eye intraocular lens power based on the first eye result is controversial, and it is not completely clear that it is beneficial in average eyes with modern generation formulas.^{9,10} In support of ISBCS, a recent sizeable comparative study found that ISBCS performed no worse than DSBCS for postoperative best-corrected visual acuity, refractive error, or complications.¹¹

Beyond the clinical concerns, the fear of malpractice as an outlier with potential complications remains, as does reimbursement.¹² Both pose significant barriers to adoption,

but times are changing. We are unaware of any successful malpractice claim based on the performance of ISBCS. The COVID-19 pandemic has forced and allowed us to push boundaries and reconsider priorities. Before the pandemic, ISBCS had been commonplace in many parts of the world and its use was growing in North America. Although more high-quality studies are needed, a growing body of evidence supports ISBCS. Improvements in technology, approach, and aseptic technique have made ISBCS a low-risk, precise, and cost-effective procedure. Patients and their families overwhelmingly express a preference for ISBCS when given a choice. In today's COVID-19 world

and beyond, patients should be given an informed option between ISBCS and DSBCS. It is time for our national societies to advocate for patient safety, quality of life, and preference and to resolve the financial penalty for performing the second-eye surgery on the same day as the first-eye surgery.

With the COVID-19 crisis upon us, we must rethink the delivery of healthcare. Just like digitized medicine, virtual care, and artificial intelligence, ISBCS truly enhances care. The arguments for these paradigm shifts go well beyond the setting of a pandemic, but now more than ever is the time to start.

Footnotes and Disclosures

Disclosure(s):

All authors have completed and submitted the ICMJE disclosures form.

The author(s) have made the following disclosure(s): I.I.K.A.: Financial support — Aequus, Aerie Pharmaceutical, Alcon, Allergan, ArcScan, Bausch Health, Beaver Visitech, Beyeonics, Camras Vision, Carl Zeiss Meditec, Corneat Vision, Ellex, ELT Sight, Elutimed, Equinox, Genentech, Glaukos, Gore, Injectsense, Iridex, iStar, Ivantis, Johnson & Johnson Vision, Kelotec, LayerBio, Leica Microsystems, Long Bridge Medical, Inc, MicroOptx, MST Surgical, Mynosys, New World Medical, Ocular Instruments, Ocular Therapeutics, PolyActiva, Sanoculis, Santen, Science Based Health, Sight Sciences, Smartlens, Stroma, Thea Pharma, ViaLase, Vizzario; Lecturer — Mundipharma

W.E.H.: Consultant — Alcon, Haag-Streit, Omega Ophthalmics, Optos, Carl Zeiss Digital Innovations, LensAR; Equity owner — Omega Ophthalmics; Lecturer — Optos, Carl Zeiss Digital Innovations, LensAR
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