WHY WE PERFORM IMMEDIATE SEQUENTIAL BILATERAL CATARACT SURGERY

All involved parties—patients, providers, and payers—can benefit from this approach.

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The subject of immediate sequential bilateral cataract surgery (ISBCS) has incited discussion since Jacques Daviel, MD, first described cataract extraction in the 18th century. Despite this long history, ISBCS remains a controversial topic and has a long way to go before being accepted as mainstream.

However, in our experience and opinion, the advantages of this surgical approach far outweigh the perceived disadvantages. Thus, the short answer to the question of "Why perform ISBCS?" is "Because it is better." This article elaborates on that stance by looking at the benefits to the relevant interested parties: the patient; the surgeon, operating room (OR) nursing staff, and hospital; and the payer.

THE PATIENTS

Patients prefer ISBCS; when suitable patients are given the choice of an immediate or delayed approach, at least 80% will opt for ISBCS after informed consent (personal data). Additionally, with the advent of intracameral antibiotics, optical biometry with improved IOL formulas, and careful adherence to the recommendations of the International Society of Bilateral Cataract Surgeons (http://isbcs.org/), the risks associated with ISBCS are small.[1]

These small risks of ISBCS are outweighed by its benefits, including faster visual rehabilitation and increased convenience for the patient. The patient is able to return to work faster, needs fewer hospital visits (with associated reduced traveling and waiting time), and needs only one new pair of glasses. In fact, it has been calculated that there is potentially a 1.5 to 2 times higher risk of death in a road traffic accident from travelling to the extra visits for unilateral sequential cataract surgery in patients suitable for ISBCS.[2] The advantages are even greater for patients in whom anisometropia is predictable or when implantation of presbyopia-correcting IOLs (with potential binocular retinal rivalry) is planned.

ISBCS is an ideal solution for patients who require general anaesthesia or who have medical comorbidities, as it bypasses the need for a second episode of anaesthesia with its associated medical risks. As the population ages, the demand for cataract surgery is projected to more than double over the next 25 years.[3] This increased need will place stress on health care systems, with increased

AT A GLANCE

- The subject of ISBCS is not new, but the practice remains controversial.
- Advantages of ISBCS include increased efficiency in the clinic and OR, faster visual rehabilitation, and lower hospital costs.
- The greatest fear associated with ISBCS is bilateral simulatenous endophthalmitis; however, of the four cases that have occurred worldwide, none followed the recommended protocol established by the International Society of Bilateral Cataract Surgeons.

efficiency and productivity needed to maintain quality of care, keep waiting times for cataract surgery at an acceptable length, and control health care costs. ISBCS fulfills these requirements, with lower hospital costs, more efficient use of OR time, and more efficient use of clinic time and space compared with delayed second surgery.

THE PROVIDERS

Surgeons prefer ISBCS; clear guidelines and an international body of opinion backed by peer-reviewed data (www.isbcs.org) support ISBCS and clarify which patients are suitable: that is, the majority of them. For the surgeon, the main benefits of ISBCS involve savings in time and efficiency. One study showed that ISBCS yielded approximately 15% greater efficiency in the number of daily operations performed.[4]

The most serious criticisms of routine ISBCS are the risk of potential bilateral visual loss as a result of bilateral complications such as endophthalmitis, toxic anterior segment syndrome, cystoid macular oedema, or refractive surprises. The greatest fear about ISBCS remains bilateral simultaneous endophthalmitis (BSE); however, only four cases of BSE have been reported worldwide in the literature, and none of these operations were done according to the protocol published by the International Society of Bilateral Cataract Surgeons.[5] In practice, this means that aseptic rules were broken, and, when these safety procedures are not respected, bad outcomes inevitably become a high risk.

ISBCS ACCEPTANCE

Payers: Despite potential economic benefits, payers do not yet fully understand the advantages of ISBCS and thus have not removed barriers to its practice.

OR Nurses and Hospitals: OR nurses will reap the same job satisfaction from ISBCS as surgeons, although extra work is required on their part. For hospitals, the improved productivity accompanying ISBCS is desirable, but only if revenue increases.

Patients and Surgeons: At least 80% of patients will choose ISBCS, given the option; benefits include faster visual rehabilitation and increased convenience. Surgeons who perform ISBCS enjoy savings in time and greater efficiency.

€120 to €850

Potential savings in cost per patient with ISBCS

A fundamental and overriding principle that must be followed is to treat each eye surgery as individual and autonomous, as recommended by the International Society of Bilateral Cataract Surgeons. It should be noted that there have been no reports of BSE in cases in which these recommendations were followed. This applies primarily to strict aseptic separation: Each eye requires the surgeon and scrub nurse to rescrub with new gloves and new instrumentation. It should be emphasized that that the instruments should come from different sterilization cycles, and substances used during the procedure, such as OVD or irrigation fluids, should be from different batches.

With the proper protocol in place, we would go so far as to suggest that there is no reasonable or logical evidence base for surgeons to refuse to perform ISBCS. This approach offers enhanced job satisfaction for surgeons due to their patients' rapid visual rehabilitation, increased OR efficiency, fewer follow-up visits, and, in some cases, enhanced revenue (although this is not true in many circumstances).

OR nurses may also prefer ISBCS. They will likely experience the same job satisfaction as surgeons performing ISBCS, although surgeons should not underestimate the extra work required of them in organizing trolleys with instruments and disposables from different sterilization cycles and solutions from different batches to minimize the risk of toxic anterior segment syndrome; this is quite onerous.

Hospitals may also prefer ISBCS, depending on the circumstances. The improved productivity, particularly in the OR, is desirable, but only if revenue increases. If the second eye surgery is not funded at all, or if it is funded at a reduced rate, then there will be a perverse incentive on the part of administrators to be less efficient.

THE PAYERS

Payers should also prefer ISBCS. We accept that payers are diverse: They may include state organizations, insurance companies, and even self-paying patients in a private health care setting. It is well documented that, compared with delayed second surgery, ISBCS reduces cost per patient by

approximately €120 to €850, depending on methodology and setting.[6,7]

One study compared the effect on hospital costs for 22 consecutive patients undergoing ISBCS with posterior chamber IOL implantation and for a randomly selected group of 22 patients undergoing similar delayed sequential bilateral cataract surgery during the same period. The average hospital costs were significantly reduced with ISBCS ($P < .0001$), with pre- and postoperative inpatient care accounting for 54% of the difference.[8]

Irrespective of the exact amount, no studies have suggested increased costs with ISBCS. Because payers are interested in thousands or hundreds of thousands of procedures, total savings will be significant. As such, health care systems also enjoy potential economic benefit from the implementation of ISBCS. Therefore, ISBCS could potentially allow health care systems to reallocate resources to other areas. In a world of reduced budgets and ever-present demand to get the best value from every health care euro, pound, or dollar, we believe that payers have not yet understood the potential advantage of encouraging ISBCS by removing barriers to its practice (ie, paying less for ISBCS than two times unilateral operations).

CONCLUSION

In 2017, we believe that the question is no longer "Why perform ISBCS?" but "Why *not* perform ISBCS?" With the proper protocol in place, the advantages of this surgical approach can far outweigh the perceived disadvantages for all parties involved. ■

Editors' Note: The British spellings of anesthesia *and* edema *have been used per author request.*

1. Li O, Kapetanakis V, Claoué CMP. Simultaneous bilateral endophthalmitis post immediate sequential bilateral cataract surgery: what's the risk of functional blindness? *Am J Ophthalmol*. 2014;157(4):749-751.
2. Chandra A, Claoué C. Simultaneous bilateral cataract surgery: a further advantage. *Eye (Lond)*. 2010;24:1113-1114.
3. Hatch WV, Campbell Ede L, Bell CM, El-Defrawy SR, Campbell RJ. Projecting the growth of cataract surgery during the next 25 years. *Arch Ophthalmol*. 2012;130:1479-1481.
4. Arshinoff SA, Chen SH. Simultaneous bilateral cataract surgery: financial differences among nations and jurisdictions. *J Cataract Refract Surg*. 2006;32:1355-1360.
5. Arshinoff S. Bilateral endophthalmitis after simultaneous bilateral cataract surgery. *J Cataract Refract Surg*. 2008;34:2006-2008.
6. Lundström M, Albrecht S, Roos P. Immediate versus delayed sequential bilateral cataract surgery: an analysis of costs and patient value. *Acta Ophthalmol*. 2009;87(1):33-38.
7. Leivo T, Sarikkola AU, Uusitalo RJ, Hellstedt T, Ess SL, Kivela T. Simultaneous bilateral cataract surgery: economic analysis; Helsinki simultaneous bilateral cataract surgery report 2. *J Cataract Refract Surg*. 2010;37:1003-1008.
8. O'Brien JJ, Gonder J, Botz C, Chow KY, Arshinoff SA. Immediately sequential bilateral cataract surgery versus delayed sequential bilateral cataract surgery: potential hospital cost savings. *Can J Ophthalmol*. 2010;45(6):596-601.

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