

IMMEDIATE SEQUENTIAL BILATERAL CATARACT SURGERY



Assessing safety and outcomes with a same-day approach to cataract surgery.

BY IYZA F. BAIG, MD, AND SUMITRA S. KHANDELWAL, MD

ENDOPHTHALMITIS RATE IN IMMEDIATELY SEQUENTIAL VERSUS DELAYED SEQUENTIAL BILATERAL CATARACT SURGERY WITHIN THE INTELLIGENT RESEARCH IN SIGHT (IRIS) REGISTRY DATA

Lacy M, Kung TH, Owen JP, et al; IRIS Registry Analytic Center Consortium¹

Industry support: None

ABSTRACT SUMMARY

This study compared the rate of postoperative endophthalmitis after immediate sequential bilateral cataract surgery (ISBCS) versus delayed sequential bilateral cataract surgery (DSBCS). The charts of more than 5.5 million patients who underwent cataract extraction between 2013 and 2018 were reviewed, and the rates of postoperative endophthalmitis (in either surgical eye) were calculated.

The rate of postoperative endophthalmitis was 0.059% in ISBCS eyes and 0.056% in DSBCS eyes, a difference that was not statistically significant. Odds ratios confirmed no statistical difference after adjusting for comorbid eye disease, age, sex, race, and insurance status. Bilateral endophthalmitis was uncommon; seven cases were identified in the DSBCS group and none in the ISBCS group.

The investigators concluded that the difference in the risk of postoperative endophthalmitis was not great enough statistically to dissuade ophthalmologists from performing ISBCS. The researchers

STUDY IN BRIEF

- An analysis of more than 5.5 million cases of bilateral cataract surgery found that the rate of postoperative endophthalmitis was statistically similar after immediate and delayed sequential bilateral cataract surgery procedures. All cases of bilateral endophthalmitis in the study occurred in the delayed sequential bilateral cataract surgery group.

WHY IT MATTERS

Patients undergoing cataract surgery are typically elderly. During the COVID-19 pandemic, it has become even more essential to minimize the risks of viral exposure. Additional considerations such as anesthesia, travel, expense, and the burden on caregivers may also be considered. In patients with bilateral cataracts, performing immediate sequential bilateral cataract surgery could reduce these risks.

acknowledged that a higher sample size and more diverse patient population may be needed to confirm their findings. The study by Lacy and colleagues, however, is the most broadly applicable on the topic of ISBCS to date.

DISCUSSION

Cataract surgery is the most commonly performed eye surgery in the United States.² Because this procedure is typically elective, it is up to the patient and their ophthalmologist to determine the ideal timing of cataract removal when cataracts are present in both eyes. In the United States, DSBCS is the standard of care, and the second eye is operated on at the surgeon's discretion after the first eye has stabilized.

A fundamental hesitation expressed regarding ISBCS is the risk of bilateral endophthalmitis.³ Centers that offer

ISBCS maintain strict aseptic separation between the two surgeries. New prepping is performed; a new sterile field is established; and new draping, sterile protective equipment, and instruments are used for the second eye.^{4,5}

ISBCS is performed routinely in some countries because it can offer benefits such as an immediate improvement in vision, fewer postoperative visits, decreased costs for the patient and health care system, and a reduced need for anesthesia.⁶ During the COVID-19 pandemic, an additional benefit of ISBCS is that it decreases the risk of exposure to SARS-CoV-2 for patients and health care workers.^{7,8}

Lacy and colleagues concluded that, although surgeons may consider reasons to avoid ISBCS, it appears that the risk of postoperative endophthalmitis is not one of them.

IMMEDIATELY SEQUENTIAL BILATERAL CATARACT SURGERY (ISBCS): AN ACADEMIC TEACHING CENTER'S EXPERIENCE

Qi SR, Arsenault R, Hébert M, et al⁹

Industry support: None

ABSTRACT SUMMARY

A retrospective study assessed the safety and outcomes of ISBCS in 2,003 patients at a tertiary academic center in Canada. Researchers evaluated intra- and postoperative complications and postoperative refractive outcomes.

Residents performed most of the procedures, and the remainder were performed by staff ophthalmologists. No eyes were excluded from the analysis based on ocular history (eg, glaucoma, macular degeneration, pathologic myopia, Fuchs dystrophy).

STUDY IN BRIEF

- ▶ A study of 2,003 patients undergoing immediate sequential bilateral cataract surgery (ISBCS) at a tertiary academic teaching center found that the rates of intra- and postoperative complications and refractive outcomes were favorable overall.

WHY IT MATTERS

It is important to tailor resident training to meet future patient demands. During the COVID-19 pandemic, a growing number of patients prefer to undergo ISBCS rather than delayed sequential bilateral cataract surgery. Resident education should reflect this evolving shift, but the surgeon's decision whether to perform ISBCS should be made on a case-by-case basis.

The study included 4,006 procedures. There were no cases of endophthalmitis or toxic anterior segment syndrome. Intraoperative complications were rare; 14 eyes (0.3%) experienced posterior capsular rupture, five (0.1%) required IOL placement in the sulcus, and seven (0.2%) had zonular loss. The low complication rates are similar to those reported in the literature.¹⁰⁻¹³ The rate (1.8%) of cystoid macular edema was comparable to that reported in large multicenter trials of patients without diabetes.¹⁴

This study was not specifically designed to compare the postoperative refractive results of patients who underwent ISBCS to those undergoing DSCBS. Nonetheless, the investigators reported that visual outcomes with ISBCS were similar to those reported for other cataract cohorts¹⁰ and that the mean spherical equivalent was -0.21 D. In the study by Qi and colleagues,⁹ no refractive surprises occurred, and no patient requested an IOL exchange owing to dissatisfaction with the refractive result.

Qi and colleagues concluded that complication rates and refractive outcomes were similar for ISBCS and DSBCS and that ISBCS performed according to the guidelines used in their study is a safe procedure.

DISCUSSION

The Canadian tertiary academic center is the first teaching institutions in North America to study outcomes and complications with ISBCS. During the COVID-19 pandemic, numerous academic centers and socialized health care systems have faced unprecedented challenges with regard to cataract surgery such as understaffed surgery

centers, concerns about exposing elderly patients to SARS-CoV-2, and a higher-than-usual backlog of patients awaiting cataract surgery.

The study by Qi and colleagues included cases that were performed wholly or in part by ophthalmology residents. Resident involvement did not appear to have a negative impact on patient outcomes.

The study investigators attributed the success of ISBCS in their study to careful patient selection by the surgeon. Patients with a known, bilateral, high-risk ocular history (eg, corneal edema in severe, bilateral Fuchs endothelial corneal dystrophy) that could predispose them to decreased vision in both eyes during the postoperative period were not selected. Further, if an intraoperative complication is encountered with the first eye, Qi et al recommend not proceeding with cataract surgery on the second eye until the complication has resolved and the eye has stabilized, as outlined by predetermined guidelines.¹⁵

When ISBCS is to be performed at an academic teaching center, Qi and colleagues advocate for increased resident training in the procedure. Surveys by other institutions have also found that most patients, if given the option, would voluntarily choose to undergo ISBCS because of social and mobility limitations and a significantly lower requirement for postoperative visits.¹⁶

One argument against ISBCS is that the refractive target for the second eye cannot be adjusted based on the refractive outcome of the first eye. Herrington et al found no refractive difference between ISBCS and DSBCS eyes,¹⁰ but other studies have reported contrary findings.¹⁷⁻¹⁹

At academic teaching centers, ISBCS may be a safe and efficient method of tackling the logistic challenges posed by COVID-19. ■

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