

UPDATES ON CATARACT SURGERY



Analyzing trends and outcomes with immediately and delayed sequential bilateral procedures.

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

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ABSTRACT SUMMARY

A retrospective cohort study used the Intelligent Research in Sight (IRIS) Registry's database to evaluate the difference in endophthalmitis rates after immediately sequential bilateral cataract surgery (ISBCS) versus delayed sequential bilateral cataract surgery (DSBCS). A patient was considered to have undergone DSBCS if surgery on the second eye was performed 1 or more days after cataract surgery on the first eye or if the procedure was performed unilaterally. Patients who developed endophthalmitis in at least one eye within 4 weeks of cataract surgery were identified using the International Classification of Diseases code both with and without additional criteria.

Of the nearly 5,573,639 IRIS Registry patients who underwent cataract surgery from 2013 through 2018, 160,000 underwent ISBCS and 5,408,030 underwent DSBCS. The rates of endophthalmitis were low and similar in both groups (0.059% ISBCS vs 0.056% DSBCS).

STUDY IN BRIEF

- A retrospective cohort study of Intelligent Research in Sight Registry data on nearly 5.6 million patients who underwent cataract extraction found no significant difference in the risk of postoperative endophthalmitis between those who underwent immediate sequential (ISBCS) versus delayed sequential bilateral cataract surgery.

WHY IT MATTERS

A concern often voiced about ISBCS is the risk of bilateral endophthalmitis. The study indicated that this may not be a valid argument against performing ISBCS. Potential benefits of the approach include reduced costs and improved productivity at ambulatory surgery centers and hospitals and increased patient satisfaction through simplified postoperative instructions, a reduced number of visits to the clinic, and a more immediate vision improvement than is achieved with delayed sequential bilateral cataract surgery.

Only seven patients (0.00012%) experienced bilateral endophthalmitis in the DSBCS group.

The endophthalmitis odds ratio increased with age in the DSBCS group, with the highest odds ratio found for individuals who were 80 years of age or older. Men had a higher odds ratio than women. No statistically significant difference based on race was found. A higher odds ratio was found for procedures that were billed through commercial insurance compared to Medicare, and a prior history of glaucoma increased the odds ratio of endophthalmitis. The odds ratio did not reach statistical significance after adjustments for age, sex, race, or insurance status.

The investigators concluded that the risk of postoperative endophthalmitis may relate more to surgical setting, comorbidities, socioeconomic status, and patient age than surgical timing.

DISCUSSION

ISBCS has been performed for more than a decade,² but procedural volume remains small compared to DSBCS. Endophthalmitis is an uncommon but devastating complication of cataract surgery. Many surgeons wary of performing ISBCS have voiced concern about the potential for bilateral endophthalmitis, but this is only one factor in the slow adoption rate of the procedure. Additional arguments against ISBCS include an inability to adjust the IOL power for the second eye based on the refractive outcome achieved in the first eye³ or to change the choice of IOL for the second eye in response to the outcome achieved for the first eye (eg, dysphotopsia), the risk of unilateral or bilateral toxic anterior segment syndrome,⁴ the placement of the wrong IOL due to confusion with the fellow eye, and

reduced reimbursement for the second eye. The last of these concerns is valid, but we found no published evidence that the other issues play a significant role in surgical safety or refractive outcomes.

Hospitals and ambulatory surgery centers (ASCs) can achieve greater productivity and economic savings with ISBCS.⁵⁻⁷ Savings realized at surgeon-owned ASCs could outweigh

the loss of revenue to the surgeon. Additional arguments for ISBCS include an immediate improvement in patients' vision, fewer clinic visits within the global period and the associated economic benefit for patients' families and support people, and simplified postoperative instructions and drop regimens.

Despite a precedent for bilateral ophthalmic surgery

(LASIK, PRK, SMILE), the benefits of ISBCS mentioned earlier, and the minimal risk ISBCS presents, an increase in its adoption rate is likely to remain slow. Declining reimbursement and economic instability and a predicted increase in patient volume, however, may incentivize more surgeons to consider ISBCS as an alternative.

TRENDS, FACTORS, AND OUTCOMES ASSOCIATED WITH IMMEDIATE SEQUENTIAL BILATERAL CATARACT SURGERY AMONG MEDICARE BENEFICIARIES

Malwankar J, Son HS, Chang DF, et al⁸

Industry support: Study author C.P., Consultant (Johnson & Johnson Vision); D.S., Consultant (Alcon)

ABSTRACT SUMMARY

Investigators performed a population-based analysis of 100% Medicare fee-for-service carrier claims data on beneficiaries who were at least 65 years of age and underwent cataract surgery from 2011 through 2019. The researchers examined how many patients underwent DSBCS compared to ISBCS and used logistic regression models to evaluate factors such as race, geographic location, comorbidities, and complications.

In the 10-year period before the COVID-19 pandemic began, 0.2% of patients (n = 4,014) underwent ISBCS, and 99.8% of patients (n = 1,940,965) underwent DSBCS. Black, Asian, and Native American patients were more likely than White patients to receive ISBCS. Individuals who resided in rural areas were more likely to undergo ISBCS than those living in metropolitan areas. Patients with systemic comorbidities were more likely to receive ISBCS, whereas those with ocular comorbidities were less likely to receive ISBCS. No significant difference was found in the rates of endophthalmitis and cystoid macular edema between the ISBCS and DSBCS groups. No one who underwent ISBCS developed bilateral endophthalmitis.

The investigators concluded that ISBCS may provide an opportunity to improve patient access to cataract

surgery but that its overall use among Medicare beneficiaries remains low.

DISCUSSION

As noted earlier, ISBCS may offer several advantages over DSBCS for physicians and patients, including fewer visits, less travel time, and more rapid visual rehabilitation.⁹ The potential benefits of ISBCS for the clinic and ASC may include the more efficient use of resources, shorter surgical waiting lists, and reduced costs. Concerns about serious ocular complications with cataract surgery remain a major obstacle to increasing ISBCS volume.¹⁰ Furthermore, as mentioned earlier, the refractive strategy for cataract surgery on the second eye is often refined based on the results achieved in the first eye. A recent retrospective study that used population-based data from the IRIS Registry found statistically worse UCVA in patients who underwent ISBCS than in those who underwent DSBCS.¹¹

Since the 1990s, the volume of ISBCS procedures has increased gradually outside the United States. In Finland, ISBCS accounts for 40% to 60% of cataract procedures.⁹ The primary advantage of DSBCS seems to be for refractive cataract surgery. Given the low and comparable rates of complications with DSBCS and ISBCS in the study by Malwankar et al,⁸ ISBCS may be an option for increasing patient access to nonrefractive cataract surgery in the United States, which accounts for most cataract procedures performed in this country. Another significant barrier

STUDY IN BRIEF

- ▶ A study of almost 2 million cataract procedures performed in the United States over the course of a decade found that the volume of immediately sequential bilateral cataract surgery (ISBCS) was extremely low. The study also found a comparably low rate of complications with ISBCS and delayed sequential bilateral cataract surgery.

WHY IT MATTERS

The US Medicare population is expected to increase from 54 million to more than 80 million by 2030. ISBCS represents one strategy for managing the steep increase in demand for cataract surgery and preventing it from overwhelming ophthalmologists.

to increasing the volume of ISBCS performed in the United States is that the country's reimbursement model is much more supportive of DSBCS. The United Kingdom, in contrast, which has long surgical waiting lists and the highest national rate of ISBCS, uses financial incentives to encourage the use of ISBCS.¹²

Regardless, the study by Malwankar et al⁸ may allow surgeons to feel more comfortable about offering ISBCS in their clinics. ■

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