variety of surgical techniques have been established to achieve cataract extraction and IOL implantation—one of the most commonly performed surgical procedures worldwide.1 Today, the majority of surgeons perform delayed sequential bilateral cataract surgery (DSBCS), scheduling surgery in the two eyes approximately 4 to 6 weeks apart. An emerging trend, however, is to perform both surgeries on the same day. The use of immediate sequential bilateral cataract surgery (ISBCS) is somewhat controversial, but there are a number of surgeons who believe this may be the future of cataract surgery.

We recently conducted a randomized, controlled study comparing refractive outcomes and patient satisfaction after DSBCS and ISBCS.2 Like previous studies of ISBCS,3-10 ours showed similar results for the two surgical approaches.

SURGICAL PROCEDURE

All patients were prescribed ofloxacin drops four times daily for 3 days before surgery. On the day of surgery, a prophylactic topical antibiotic protocol was combined with a strict aseptic technique to minimize the risk of infection during surgery. Aqueous povidone-iodine 5% was applied to the conjunctival sac, the lids were mechanically scrubbed, and a plastic drape fully covering the lid margins and eyelashes was placed. Topical anesthesia was used for each eye; in some cases, intracameral lidocaine 1% was added.

Following phacoemulsification through a 3.5-mm clear corneal incision, an acrylic IOL (AcrySof MA30 or MA60; Alcon Laboratories, Inc., Fort Worth, Texas) was implanted. Trypan blue was used in eyes with mature cataract to facilitate capsulorrhexis creation. At the conclusion of surgery, 1 mg cefuroxime was injected into the anterior chamber and chloramphenicol drops were applied. If the wound was not self-sealing, one or two radial sutures were placed.

The patient received a transplant eye shield to use nightly for 1 week and was prescribed ofloxacin-prednisolone acetate eyedrops four times daily for 3 weeks after surgery. Ocular assessments were performed preoperatively and at 1 day and 1 month after each surgery, therefore requiring more follow-up visits in the sequential surgery group. Patients in the ISBCS group were told that each procedure would be separated by 5 to 10 minutes, allowing enough time for the staff to change surgical gowns and gloves, replace all instruments, and redrape and reclean the eye for surgery. Different batches of balanced saline solution and ophthalmic viscosurgical devices were also used for the second-eye surgery. Second-eye surgery was deferred if a complication occurred or the surgeon had an unexpected difficulty during first-eye surgery.

RESULTS

Of 491 patients who completed the study, 250 underwent ISBCS and 257 underwent DSBCS. In the ISBCS group, 67.2% of eyes were within ±0.50 D of intended correction and 91% were within ±1.00 D at 1 month. Results were similar in the DSBCS group, with 69.2% of eyes within ±0.50 D of intended correction and 90.3% within ±1.00 D. The differences were not statistically significant (P=.92). The greatest deviations from target refraction were likely due to measurement errors, as we did not use the most advanced anterior chamber depth prediction algorithms. Complications were rare and similarly distributed between the groups.

TAKE-HOME MESSAGE

• The refractive outcomes, rate of complications, and patient satisfaction in this study were similar whether second-eye surgery was performed simultaneously or sequentially.

• With proper patient selection, ISBCS can yield excellent outcomes after surgery.
both groups, 95% reported being very satisfied with surgery.

No serious complications occurred in either group. After surgery in both groups and in both eyes, intraocular pressure of greater than 30 mm Hg was equally common in both groups. One eye in the ISBCS group and two eyes in the DSBCS group developed cystoid macular edema, and 31 eyes in total developed corneal edema. One IOL was decentered in the bag in each group. Neither required repositioning.

At 1 month, distance BCVA in the better eye was at least 20/25 in 77.1% of eyes in the ISBCS group and 68.0% of eyes in the DSBCS group. Distance BCVA was 20/40 or better in 98.0% and 96.0% of the better eyes, respectively. These differences were not statistically significant (P=.61).

CONCLUSION

It is to be hoped that this study will help to promote the safety and usefulness of ISBCS. According to our results, the refractive outcomes, rates of complications, and patient satisfaction are similar regardless of whether second-eye surgery is performed simultaneously or sequentially. Some of the arguments against performing ISBCS include the risks of bilateral endophthalmitis, corneal edema, cystoid macular edema, and retinal detachment; however, in our study, no increased risks associated with performing surgery in both eyes on the same day were seen.

ISBCS is an effective surgical technique that, with proper patient selection, can yield excellent outcomes after surgery. We recommend that ISBCS not be performed in patients with high myopia or at increased risk for infection or corneal edema. We use extreme caution when performing ISBCS in patients with glaucoma, lenticular subluxation, dense cataract, or significant corneal or retinal pathology.

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