Return to the Operating Room After Resident-Performed Cataract Surgery

Cataract surgery is one of the most commonly performed operations during ophthalmology residency training, and its complications have been well described.1-3 While returns to the operating room within 30 days after routine surgery serve as a benchmark for surgical quality in other specialties such as neurosurgery and general surgery, reoperation after cataract surgery has not been investigated.4,5 The aim of this study was to examine the rate and indications for reoperation after resident-performed cataract surgery at 30 and 90 days.

Methods | This was a retrospective study approved by the institutional review boards of the University of California, San Francisco/San Francisco General Hospital and the San Francisco Veterans Affairs Medical Center. The requirement for informed consent was waived by the institutional review boards. Billing codes were used to identify all patients at 2 teaching hospitals within a single residency program who underwent resident-performed cataract surgery from January 1, 2005, to December 31, 2010. Any return to the operating room within 90 days of the surgery was identified as a reoperation. Variables studied included age, type of cataract surgery, training level of the resident, time to reoperation, indication for reoperation, and type of reoperation. Univariate analyses were conducted with Microsoft Excel (Microsoft Corp) to gather descriptive data about the reoperation cases. A χ² test was conducted to determine whether differences in reoperation rates among residency year quarters were statistically significant.

Results | There were a total of 3310 resident-performed cataract operations and 70 reoperations within 90 days, for a reoperation rate of 2.11%. The reoperation rate at San Francisco General Hospital was 2.25%, while the reoperation rate at the San Francisco Veterans Affairs Medical Center was 1.99%. The mean (SD) age of patients requiring reoperation was 67.3 (13.5) years. Sixty percent of reoperations involved the right eye, while 40% involved the left eye. The most common primary procedure performed was phacoemulsification (88.6%), followed by manual cataract extraction (11.4%). The rate of return to the operating room following manual cataract extraction was 4.70%, while the rate of return to the operating room after phacoemulsification was 1.94%. The rate of reoperation in the first quarter of the academic year was 1.49%, followed by 2.37% in the second quarter, 2.45% in the third quarter, and 1.78% in the final quarter of the academic year. Fifty-two reoperations (74.3%) occurred within 30 days of the primary cataract surgery, while an additional 18 (25.7%) occurred 31 to 90 days after cataract surgery. The most common indications for reoperation included retained nuclear fragment, dislocated intraocular lens, incision leak, and retinal detachment (Table). The most common reoperation procedures were pars plana vitrectomy with pars plana lensectomy, incision repair, pars plana vitrectomy with membrane peel, intraocular lens exchange, and intraocular lens repositioning (Table). For the 9 patients undergoing pars plana vitrectomy with membrane peel, the indications included epiretinal membrane, macular hole, and retinal detachment repair.

Discussion | Proficiency in cataract surgery is one of the main objectives of surgical training during ophthalmology residency. In addition to complication rates, the need for reoperation is an important factor to consider. The current study provides valuable insights into the rate and indications for reoperation after cataract surgery. Further research is needed to understand the factors contributing to reoperation and to develop strategies to improve surgical outcomes.
operation may reflect suboptimal surgical management and serves as an additional marker for outcomes assessment. Reported rates of unplanned return to the operating room within 30 days after surgery vary from 3.5% in general surgery to 28% in pediatric neurosurgery.1-5 In this study, the reoperation rate after resident-performed cataract surgery was 2.11%. Interestingly, the rate of return to the operating room was lowest in the first quarter of the academic year, which may reflect greater supervision at the beginning of the academic year. The rate of retained lens fragment was 0.7%, which is comparable to the previously published rate of 0.8% after resident-performed cataract surgery.6 Reoperations after cataract surgery can have important implications for visual prognosis, morbidity, and health care costs. Additional investigation is required to elucidate the perioperative risk factors associated with reoperation. The reasons for reoperation can provide another method for evaluating surgical skills and can help identify surgical competencies that require improvement.

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Conflict of Interest Disclosures: None reported.


Pilot Study of Individuals With Diabetic Macular Edema Undergoing Cataract Surgery

Although cataract surgery is performed in individuals with diabetes mellitus, data are limited regarding visual acuity (VA) or macular edema (ME) outcomes after surgery in eyes with diabetic ME (DME) at the time of surgery.1,2 Prior to an interventional study to try to improve long-term outcomes in these eyes, the Diabetic Retinopathy Clinical Research Network (DRCR.net) conducted an observational study (protocol at http://www.dcr.net) to assess factors affecting success of such an interventional trial. The primary goal of this study was to assess feasibility of recruitment and logistics of interaction among DRCR.net sites and cataract surgeons. Secondary goals were to describe the management of these eyes, any changes in ME (due to DME, postsurgical cystoid ME, or both), and short-term vision outcomes.

Methods | This was a prospective, noncomparative study conducted at 30 US sites. Adults with at least 1 eye with DME on clinical examination involving the center of the macula, optical coherence tomography (OCT) central subfield thickness of 250 μm or greater using time-domain OCT or 310 μm or greater using spectral-domain OCT, VA of light perception or better, and scheduled for cataract surgery within 14 days of enrollment were eligible. Cataract surgery was conducted per the individual surgeon’s practice. Protocol visits by study investigators (retina specialists) included a preoperative baseline visit and a 16-week postoperative visit. Preoperative, intraoperative, or postoperative treatments for ME followed the investigators’ and cataract surgeon’s standard care. Standardized best-corrected VA and OCT scans were performed by certified personnel.3 The protocol and Health Insurance Portability and Accountability Act-compliant informed consent forms were approved by the institutional review board for each participating site. Each participant gave written informed consent to participate in the study.

Results | Sixty-eight study participants were enrolled between October 9, 2009, and July 8, 2010, when enrollment was discontinued owing to a slow enrollment rate. Among 63 eyes for which eligibility was confirmed, with baseline characteristics in Table 1, 60 (95%) completed the 16-week visit. Twenty-one eyes (35%) received no treatment for ME during the study. Preoperative treatment, defined as focal/grid laser or intravitreal triamcinolone acetonide within 4 months of surgery or intravitreal anti-vascular endothelial growth factor within 2 months of surgery, was reported in 26 eyes (43%). Four eyes (7%) and 25 eyes (42%) received intraoperative and postoperative ME treatments, respectively. Among eyes receiving ME treatment during the study, 27 (69%) received anti-vascular endothelial growth factor drugs. One eye had a ruptured capsule during surgery. At the 16-week visit, mean change in VA letter score was +12 (95% CI, +8 to +16) (Table 2). Improvement of at least 4 lines in VA was reported in 19 eyes (32%; 95% CI, 20% to 44%).

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