

Changes in ocular and surgical parameters during the waiting period for cataract operation

Patrick S. H. Li, MRCS (Ed), Jimmy S. M. Lai, FRCOphth
Department of Ophthalmology, United Christian Hospital, Hong Kong, China.

Correspondence and reprint requests:

Jimmy S. M. Lai, Department of Ophthalmology, United Christian Hospital, Hip Wo Street, Kwun Tong, Kowloon, Hong Kong, China.

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Abstract

Aim: To evaluate the changes in ocular and surgical parameters during the waiting period for cataract extraction.

Patients and methods: The records of all patients who had cataract extraction between January and March 2001 at the United Christian Hospital were reviewed. The initial visual acuity when the operation was scheduled was compared with that at the preoperation visit, approximately 3 weeks before the operation. The patients were divided into 2 groups based on their initial visual acuities. Patients in group 1 were those with initial visual acuities <0.1 . Patients were assigned to group 2 if they had initial visual acuities ≥ 0.1 . The mean waiting time for cataract operation was calculated and compared between the 2 groups. The operation cancellation rate and change in the method of cataract extraction were also studied. Cataract-related complications occurring during the waiting period were documented.

Results: The records of 107 consecutive patients undergoing 107 cataract operations were reviewed. The mean age was 73.7 ± 8.1 years. Fifty one patients (47.7%) with initial best corrected visual acuity <0.1 (group 1) had a mean waiting time for cataract operation of 20.7 ± 5.1 weeks. The remaining 56 patients (52.3%) with initial best corrected visual acuity ≥ 0.1 (group 2) had a mean waiting time of 35.1 ± 6.7 weeks. Forty seven patients (43.9%) had a further decrease in visual acuity while

waiting for cataract operation. There were no lens-induced complications such as phacomorphic glaucoma for any patients waiting for cataract surgery. Three patients required a change of the cataract extraction method from phacoemulsification to planned extracapsular extraction due to increased cataract density. Eight patients (7.5%) had the cataract operation cancelled. Five of the 8 patients had their operations cancelled due to changes in comorbidities.

Conclusion: In a local hospital, where general health is poor, a 20- to 35-week waiting time for cataract extraction, based on the initial visual acuity, may be acceptable for patients with uncomplicated cataract. Patients with previous cataract operation cancelled due to poorly controlled systemic diseases should be re-scheduled for early surgery.

Key words: Cataract extraction, Waiting lists

Introduction

Cataract is a potentially blinding but treatable eye disease. Cataract extraction with implantation of an intraocular lens (IOL) is the standard treatment. Logically, most patients would like to have their vision restored as soon as possible. However, because of the heavy work load and limited resources in some hospitals, patients may wait for some time before cataract surgery can be performed. The waiting time for cataract extraction is not only long in Hong Kong but also in some other developed countries such as Finland¹

and the United Kingdom.^{2,3} Long waiting times cause inconvenience and disability to patients and increases the burden on supporting family members.^{2,4-11} Although cataract generally causes slow and progressive blurring of vision, the density of the cataract may change while patients are waiting for surgery. Removal of a very dense cataract with phacoemulsification may be technically difficult, necessitating conversion to extracapsular cataract extraction (ECCE). Moreover, if the cataract becomes too mature it may lead to phacolytic and phacomorphic glaucoma.

In this retrospective study, the mean waiting time for first eye cataract operation at the United Christian Hospital between January and March 2001 was calculated. Changes in patients' ocular and medical conditions, the incidence of cataract-related complications occurring during the waiting period, and the change in the cataract extraction method were evaluated. It is hoped that the data can act as a guide to prioritize the order of surgery when balancing safe cataract management and limited resources.

Patients and methods

The records of consecutive patients who were scheduled for their first eye cataract extractions in a 3-month period were reviewed. Patients scheduled for second eye cataract operation and patients scheduled for combined procedures were excluded, as were patients undergoing emergency operations for traumatic cataract and phacomorphic glaucoma. The best corrected visual acuity (BCVA) at the time when the cataract operation was planned (VAo) was compared with that approximately 3 weeks before the operation (Vaf). Patients were divided into 2 groups based on their VAo. Patients in group 1 were those with a VAo <0.1 and patients in group 2 had a VAo ≥0.1. The mean waiting time for cataract operation was calculated separately for the 2 groups. All the operations were performed by, or under the supervision of, a specialist ophthalmologist defined as one who has received at least 6 years training at a recognized ophthalmic training institution. The Vaf, the occurrence of cataract-related ocular complications, the operation cancellation rate, the change in comorbid medical conditions, and the change in the cataract extraction method were recorded.

Results

107 patients were included in the study. The mean age was 73.7 ± 8.08 years. There were 51 (47.7%) and 56 (52.3%) patients in groups 1 and 2, respectively. The mean waiting times for cataract surgery were 20.70 ± 5.12 weeks (range, 3 to 51 weeks) for patients in group 1 and 35.10 ± 6.70 weeks (range, 2 to 52 weeks) for patients in group 2 (Figure 1).

The initial mean BCVA of all patients was 0.15, and 0.22 for the group of patients with BCVA ≥0.1 when the cataract operation was scheduled. The BCVA at the preoperation visit was compared with that at the initial visit (Figure 2).

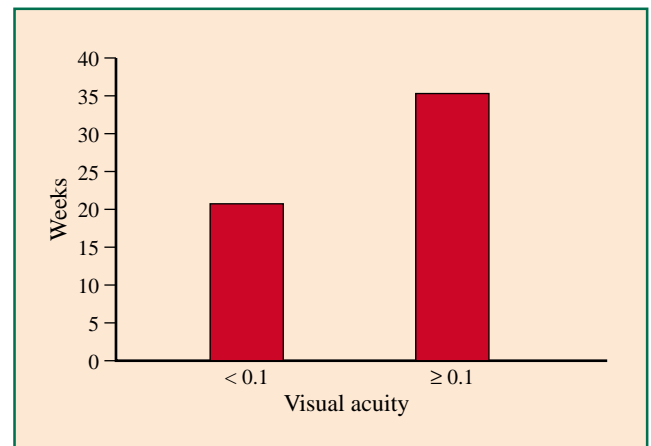


Figure 1. Mean waiting time for patients in group 1 (visual acuity < 0.1) and group 2 (visual acuity ≥ 0.1).

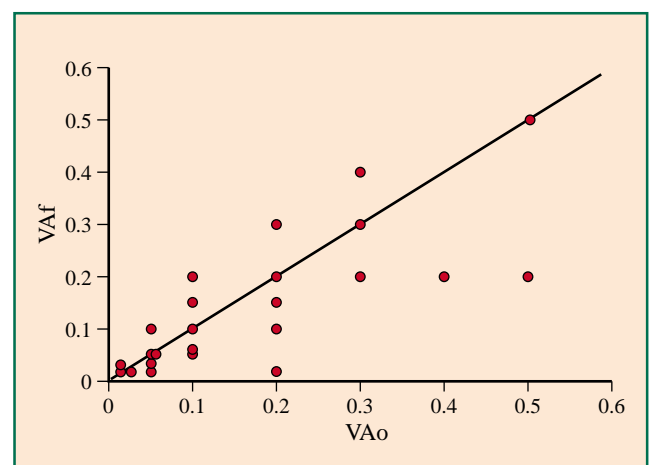


Figure 2. Visual acuity at the time when cataract operation was scheduled (VAo) versus visual acuity 3 weeks before the surgery (Vaf).

Forty seven patients (43.9%) had further deterioration in their visual performance while waiting for cataract operation. Thirteen patients (13.1%) had a decrease in visual acuity by more than 2 Snellen lines. Three patients (2.8%) had a significant increase in the cataract density, to the extent that planned phacoemulsification had to be converted to planned ECCE. There were no lens-induced complications such as phacomorphic or phacolytic glaucoma during the waiting period.

Eight scheduled operations (7.5%) were cancelled, 5 of which were due to medical illness and 1 was due to recent symptomatic nasolacrimal duct obstruction. The remaining 2 operations were cancelled due to patients' personal reasons. **Table 1** summarizes the changes that occurred during the wait for cataract surgery.

Thirty patients (28.0%) had other ocular pathologies besides cataract. The most common was non-proliferative diabetic retinopathy, followed by age-related macular degeneration and myopic degeneration. Seventy eight patients (72.9%) had concomitant medical diseases. The most common were diabetes mellitus, hypertension, chronic obstructive airway disease, and ischemic heart disease.

Table 1. Changes in ocular and surgical parameters during the waiting period for cataract operation.

	Number (%)
Number of patients	107
Decrease in visual acuity	47 (43.9)
Decrease in visual acuity >2 Snellen lines	14 (13.1)
Phacoemulsification converted to extracapsular cataract extraction	3 (2.8)
Cancellation of operation	8 (7.5)
Medical problems	5
Ocular problems	1
Personal reasons	2
Cataract-related complications	0

Discussion

Senile cataract is a slowly progressive and potentially blinding eye disease. In general, the visual acuity decreases as the cataract grows denser. Fortunately, cataract is a treatable disease. Cataract extraction with intraocular lens implantation will usually restore the vision. Cataract does not cause permanent damage to the ocular tissue unless complicated by conditions such as phacomorphic glaucoma or lens-induced iritis. Therefore, cataract extraction for uncomplicated cataract is not considered to be an urgent operation. However, if the waiting time for the operation is long, the cataract may grow in size and density and may potentially lead to cataract-related complications.

In this study, the less dense cataracts of patients with a visual acuity ≥ 0.1 were operated on after a mean waiting time of 35.1 weeks. Patients with denser cataracts whose visual acuity was < 0.1 were operated on after a mean waiting time of 20.7 weeks. In this group, only 13.1% of patients had further decreases in visual acuity by more than 2 Snellen lines. No cataract-related complications of phacomorphic and phacolytic glaucoma were encountered.

Phacoemulsification is currently the preferred surgical method of cataract extraction and is considered to be associated with a faster recovery time and better visual outcome than ECCE.¹² Although 43.9% of the patients had a progressive decrease in the visual acuity, probably due to increased cataract density, during the waiting period, only 2.8% required conversion of phacoemulsification to planned ECCE for removal of the dense cataract. The decision was made preoperatively and the reason for conversion was the surgeon's preference for a safer surgery for dense cataract. The operation cancellation rate was 7.5%. Cancellation may be related to a long waiting time because patients' concomitant medical conditions may have changed by the time of cataract surgery. This is especially important in areas where

patients have poor general health. At the United Christian Hospital, cataract with coexisting medical diseases is prevalent. Close communication between the ophthalmologist and the patient's physician is crucial to maintain the patients' general medical health during the waiting period.

Cancellation of the scheduled operation will certainly increase the administrative workload of the medical and nursing staff. Patients whose operations are cancelled often need referral to the physicians for systemic evaluation. Patients will need ophthalmic re-assessment before another operation day is scheduled. On the other hand, other patients who are waiting for surgery will be invited to fill the vacancy. This will involve the coordination of the ophthalmologists, anesthetists, physicians, nursing staff of various departments, optometrists, and the administration staff. Short waiting times should minimize the chance of cancellation thereby eliminating the extra administrative workload.

Different hospitals have different prioritization methods for patients needing cataract surgery.^{2,7,13,14} Some are based on visual acuity, cataract density, coexisting ocular pathology, threat to independent living, and perceived visual handicap.⁷ At the United Christian Hospital, visual acuity is an important guideline for prioritizing cataract surgery. In general, patients with poorer visual acuities are operated on earlier and no major complications have been encountered.

There are limitations to this retrospective study. Patients were assessed by different ophthalmologists, who may have different views about the cataract density. There was no control group for comparison and it is not known whether a shorter waiting time is more beneficial for patients. This study only evaluated the objective changes and not the subjective physical and social disabilities of patients, for example whether they injured themselves due to poor vision. Due to the retrospective nature of the study, important data may be missing and it is not possible to do a subgroup analysis to evaluate all the ocular, medical, and socio-economic factors that may help with prioritization of cataract surgery. A large-scale prospective study looking into all the factors and surgical outcomes may provide answers to these questions.

Conclusion

In a local hospital where the general health of the population is poor, a 20- to 35-week waiting time for cataract extraction based on the initial visual acuity may be acceptable for patients with uncomplicated cataract. However, patients who have previously had a cataract operation cancelled due to poorly controlled systemic diseases should be taken into consideration for an earlier surgery.

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