DISCHARGING ROUTINE PHACOEMULSIFICATION PATIENTS AT ONE WEEK

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SUMMARY

The reduction of surgically induced astigmatism and rapid refractive stabilisation after phacoemulsification have been well studied and often lead to reduced follow-up. In this prospective study we reviewed a cohort of 100 patients discharged with a refractive prescription at their 1 week post-operative appointment following routine sutureless phacoemulsification through a corneal or scleral section. The aim was to assess the incidence of late pathology and need for review. Eighty-eight patients attended for review between 3 and 4 months post-operatively, of whom 8 (9.1%) who had been symptomatic had already visited ophthalmic casualty. Nine (10.2%) benefited from the follow-up appointment: 4 were given a new refractive prescription that increased their Snellen visual acuity by 1 line; the other 5 were all symptomatic or had incidental findings. We feel that provided there is easy access to the eye department, early discharge with or without refraction is justifiable as those with surgically related pathology at any stage are symptomatic.

Removal of a cataract through a small incision by phacoemulsification results in faster visual rehabilitation than conventional extracapsular surgery. The reduction of induced astigmatism and the stability of refraction has been well studied[1–6] and may allow for early discharge from follow-up.

The Royal College of Ophthalmologists' guidelines for cataract surgery recommend that follow-up should be at 1–2 weeks after surgery with further review and refraction after 5–6 weeks.[7] Removal of sutures for refractive manipulation may require a further appointment after 3 months to allow adequate wound healing. Patients who have extracapsular extraction will therefore have a minimum of two post-operative visits and often more if suture removal is undertaken.

The guidelines also recognise that the timing of and need for second clinic review depend on the surgical technique used, rate of wound healing, coexistent pathology and amount and stability of astigmatism. Many surgeons review their phacoemulsification patients at 1 week, or sometimes even earlier, and, if appropriate, discharge them. Patients under the care of one of three consultants at this hospital are, if appropriate, routinely discharged at 1 week with a prescription for new spectacles. It was our impression that this policy works well in a busy unit, reducing the clinic load and avoiding unnecessary visits for the patients without missing any significant ocular pathology.

To investigate this we reviewed a cohort of patients who were discharged 1–2 weeks after routine small-incision sutureless surgery. They were recalled by letter and seen at between 3 and 4 months post-operatively; the majority of comparable routine extracapsular cases would have been discharged by this time.

PATIENTS AND METHODS

Patients were recruited consecutively after uncomplicated phacoemulsification surgery between June 1995 and February 1996. Three consultant teams were involved in the study. The following criteria were used for patient selection: (1) routine sutureless phacoemulsification through a corneal incision or scleral tunnel, (2) seen and discharged at the 1–2 week clinic review with a corrected visual acuity of 6/9 or better, intraocular pressure below 21 mmHg and no ophthalmic indication for follow-up except listing for contralateral cataract extraction.

Nine surgeons, of all grades between senior house officer and consultant, participated in the study.

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Surgical Method

Surgery under general or local anaesthetic was through a 3.2–3.5 mm corneal incision or a scleral tunnel, depending on the surgeon's choice. Using a viscoelastic solution (Healon, Healon GV or Pro Visc) continuous curvilinear capsulorhexis, hydrodissection with balanced salt through a Rycroft cannula and nuclear rotation were achieved. Phacoemulsification with an OMS Diplomate machine was by 'divide and conquer', 'stop and chop' or 'chip and flip' techniques. Soft lens matter was aspirated with automated I/A or through a Simcoe canula. One-piece polymethylmethacrylate phacoemulsification or foldable optic silicon Starr and Alcon lenses were implanted in the capsular bag through an appropriately enlarged section and viscoelastic aspirated. The incision was confirmed as watertight by using a swab or flourescein after refilling the anterior chamber with balanced salt solution, and left sutureless. When a scleral tunnel was used the overlying conjunctiva was repositioned and fixed using bipolar diathermy. Subconjunctival cefuroxime 62.5 mg was given at the end of the procedure and a cartella shield with or without a pad applied.

Follow-up

All patients had slit-lamp examination during the morning of the first post-operative day which included Goldmann applanation tonometry. After satisfactory examination patients were given Maxitrol (Alcon) or Betnesol-N (Glaxo) drops to use 4 times daily and a follow-up clinic appointment made for between 1 and 2 weeks. Patients with intraocular pressure over 30 mmHg on day 1 were treated with oral acetazolamide 500 mg stat. but were not excluded from the study.

At the 1 week clinic visit patients had their Snellen visual acuity measured and were refracted by an optometrist. An examination by an ophthalmologist included measurement of intraocular pressure, observation of wound integrity, anterior chamber activity, lens centration and fundoscopy. Patients who had a normal intraocular pressure, no other indication for follow-up and a corrected visual acuity of greater than or equal to 6/9 were given a prescription for their new spectacles if appropriate and discharged. They were asked to tail off their topical steroid drops over the following 3 weeks and to return via their GP or ophthalmic casualty if they experienced any problems after discharge.

One hundred patients were contacted by letter and asked to attend for review between 3 and 4 months post-operatively. The review appointment was performed by an independent observer not involved in the patient's surgery. Any visit to ophthalmic casualty between the two appointments was noted. The patients' visual acuity was measured wearing the refractive prescription given to them at their previous visit and subjective refraction then repeated. If the patient noted significant improvement and wished to change their spectacles they were given a new prescription. A history was taken and a full slit-lamp examination including fundoscopy performed.

Patients who failed to attend for review were sent one further appointment.

RESULTS

During the study period 336 phacoemulsification procedures were performed by the three consultant teams. One hundred (29.8%), performed by one of a group of nine surgeons (Table I), fulfilled the study criteria.

Of the 100 patients recalled 88 attended for review; 12 failed to attend, of whom 2 had died. All those who did attend were seen between 3 and 4 months, the mean interval after surgery being 3.7 months. Twenty-five per cent had had surgery through a scleral tunnel, 75% through a corneal stab incision. Eight symptomatic patients had visited ophthalmic casualty prior to their review appointment; the diagnoses found at the casualty visit are shown in Table II. Checking of casualty records over this period revealed that none of the patients who failed to respond to our recall had presented in this way.

Of those seen for review the mean magnitude of change in spherical equivalent refractive error was 0.10 dioptres (D) ± 0.14 (SD) (range 0–0.625 D). Four were given a new prescription, which in all cases improved their Snellen visual acuity by 1 line. The mean change in magnitude of spherical equivalent in this group was 0.43 D, mean change 0 D, mean change in astigmatism was 0.1 D, mean change in cylinder axis 5° (range 0°–60°).

Five patients were found at review to have demonstrable pathology. Two of these were symptomatic: one complained of floaters caused by posterior vitreous detachment but had an otherwise normal fundus examination, the other complained of poor vision in low light caused by anterior capsule opacification and shrinkage of the capsulorhexis margin that only became clinically apparent on dilation of the pupil. The benefits and risks of YAG laser treatment for this were discussed with the patient at further review but she declined and was discharged. Of the 3 who were asymptomatic, one patient was found to have recurrence of anterior

Table I. Numbers of operations performed by different surgical grades

Grade of surgeon	No. of operations
Consultant	40
Senior registrar	55
Registrar	3
Senior house officer	2

Table II. Details of casualty visits between clinic appointments

Diagnosis	No. of patients
Floaters and posterior vitreous detachments	3
Blepharitis	2
Conjunctivitis	2
Anterior uveitis	1

uveitis related to previous herpes zoster infection which was treated and resolved, one had early posterior capsular opacification and was given a 6 month review appointment and the last was found on fundoscopy to have a disc margin nerve fibre layer haemorrhage in the pseudophakic eye, the disc otherwise appearing normal. Intraocular pressure had not been raised at any stage. There was a family history of glaucoma. By the time of review the patient had moved away from the area so was referred elsewhere for investigation. To date no treatment has been necessary.

DISCUSSION

Phacoemulsification is revolutionising cataract surgery in many ways. Of course one of the great advantages to the patient and surgeon is rapid visual rehabilitation with reduced hospital attendance post-operatively. This study shows such early discharge is appropriate and not detrimental to the patient.

We reviewed both scleral tunnel and corneal section surgery, but the study was not designed to compare the two. Most of the former were performed in the first few months of the study as later there was a trend towards the use of a corneal stab incision. The 4 patients who were given a repeat prescription at their late review all had clear corneal incisions, but the small numbers do not allow any conclusion to be drawn from this.

The 8 patients who visited ophthalmic casualty after their 1 week appointment (Table II) all knew that they had a further review but were symptomatic. All responded to treatment and had been discharged from casualty follow-up by the time of review, so assuming a free access policy for all post-operative patients a routine clinic visit added no benefit.

Two of the other patients seen for late review were symptomatic but did not present early. One was the patient with posterior vitreous detachment causing symptomatic floaters for less than a week; the other was the patient with anterior capsular shrinkage and opacification. The former was due for review in the same week by coincidence and had therefore not presented to casualty. The latter, with a post-operative complication of phacoemulsification previously described,[8] had a chronic condition that caused the patient only minor problems and which eventually did not need treatment. However these 2 patients show how, even in a unit with an ophthalmic casualty, knowledge of another review may actually delay presentation.

The 3 patients seen at late review who needed further treatment or follow-up but were asymptomatic are important. The patient with anterior uveitis related to previous herpes zoster should not have been discharged as he had a past history and required gradual tapering of his topical steroid. The case of optic disc rim nerve fibre layer haemorrhage was also an incidental finding as it was not present at discharge and is unlikely to be related to the cataract surgery. The last of these asymptomatic patients was felt by the examiner to warrant review for posterior capsular opacification. However, in the clinical setting this is a subjective assessment; the patient was still seeing 6/6 and many would not have arranged review for what was going to become symptomatic if it justified treatment.

Seventy-nine patients (89.8%) who kept their last review appointment were happy with their post-operative condition and had a normal examination. It was noted by those seeing the patients for late review (M.E., S.R.) how many were pleased about a further visit and reassurance. This, in conjunction with the high attendance rate for review, suggests to us that although discharging early may be safe, it is worthwhile giving patients reassurance and information at discharge. We have therefore updated our patient information sheet given at the time of their surgery to describe to them their likely progress after cataract removal, how long their follow-up will be and what symptoms should alert them to seek further consultation.

During this study 29.6% of the phacoemulsification procedures performed under the care of three consultants fulfilled the study criteria. Given that there is a financial and manpower benefit from early discharge this percentage is obviously important. However, our figure of 29.6% is misleading for several reasons. Firstly there is the requirement for best corrected visual acuity at discharge of 6/9 or better: this was chosen to aid monitoring visual acuity but of course excludes patients who were discharged with a stable pseudophakic eye but reduced visual acuity due to an unrelated disorder not requiring follow-up, such as age-related macular degeneration. Secondly, the study was performed in a teaching hospital that is a tertiary referral centre: a greater proportion of patients will require follow-up because of concurrent disease. Surgery performed by juniors in training may be less suitable for early discharge, shown by the proportions done by different grades (Table I). One selection criterion was that the surgery had been sutureless. We stipulated this because some surgeons like to remove all sutures before discharge while others would be happy to leave what is usually a single corneal suture.

This study was performed in a unit where all post-operative cataract patients are reviewed after 1

week. It is our policy to refract for dispensing at this stage, but of course patients may be discharged without a prescription and asked to visit an optician. The small average change in refractive error between the two reviews shown here, along with previous research, encourages early dispensing. We felt that the 4 patients who benefited from a repeat prescription constitute a small proportion and none of them had more than a 0.625 D change in spherical equivalent. The small changes in refractive error in most cases could at least partly be explained by normal variation, and subjective and objective intra- and inter-observer variation.

The work presented here was designed to augment our existing system of review at day 1, review and discharge at 1 week. The timing of and need for day 1 and week 1 reviews were outside the realms of this study and deserve further investigation.

The use of our open access policy to eye casualty by post-operative cataract patients has been demonstrated in this study. In centres where such departments are designed to offer primary care such a policy is easy but in those, like ours, that are secondary referral centres it may be important to set a time limit on open access for post-operative phacoemulsification patients. At present we ask those who telephone for advice more than 2 months post-operatively, after discussion with an ophthalmic nurse, to visit their general practitioner first.

Summarising our findings we believe that, assuming a free access policy to ophthalmic casualty, discharging routine phacoemulsification patients at 1 week is safe and justifiable. Patients benefit from education about their post-operative course at the time of discharge.

Key words: Cataract extraction, Phacoemulsification, Post-operative complications, Patient discharge, Follow-up studies.

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