

# First day follow up for routine phacoemulsification?

L Whitefield, J Crowston, B C Little

## Abstract

**Aims**—To determine the postoperative morbidity on day 1 after uncomplicated phacoemulsification.

**Methods**—A prospective study was performed on 100 otherwise healthy eyes after uncomplicated phacoemulsification and lens implant. Patients were examined on the first postoperative day and any deviation from a set postoperative protocol was recorded.

**Results**—Transient intraocular pressure rises of 30 mm Hg or greater were seen in three eyes. These all settled after a single dose of oral acetazolamide 250 mg.

**Conclusions**—The results of this study reinforce the clinical impression that the need for day 1 routine follow up in this selected group of patients is questionable and probably unnecessary.

(*Br J Ophthalmol* 1996; 80: 148–150)

With the advent of small incision modern microsurgical techniques, day-case cataract surgery has become increasingly popular. Economic forces dictate an increasing demand for day-case surgery.<sup>1</sup>

In many ophthalmic units in the UK, patients are reviewed routinely in the hospital the day after day-case cataract surgery. In contrast with other authors,<sup>2,3</sup> our experience is that many patients decline day-case surgery owing to difficulties in attending hospital the next day. Reasons commonly include inadequate transport facilities, difficulty parking in inner cities, distance from hospital, reliance on friends and relatives. The population group requiring cataract surgery is frequently affected by these problems and this results in a lower rate of day-case surgery.

## Patients and methods

Patients were recruited to this prospective study following uncomplicated phacoemulsification surgery between January and March 1995. We analysed the results from the first 100 patients.

Patients were excluded on the following grounds:

- (1) Preoperative exclusions – ocular hypertension, glaucoma, uveitis, small pupil, trauma.
- (2) Complications of local anaesthesia – retrobulbar haemorrhage, suspected globe perforation.
- (3) Operative exclusions – poor wound construction, incomplete capsulorhexis, iris trauma, posterior capsule rupture, vitreous

loss, or dislocation of nucleus or nuclear fragments into vitreous cavity.

Ten surgeons participated in the study and ranged in experience from senior house officer to consultant. Operations were performed under local or general anaesthetic.

## SURGICAL METHOD

Corneal or scleral tunnel incisions were fashioned. Continuous curvilinear capsulorhexis was performed under viscoelastic material (Healon, Healon GV, or HPMC). The lens nucleus was mobilised using balanced salt solution and blunt hydrodissection cannula. Phacoemulsification using a Storz Premier phacoemulsifier with either divide and conquer, chip and flip, or phaco chop techniques. Soft lens matter was aspirated using automated irrigation aspiration. Foldable 6.5 mm optic silicone Starr lenses or single piece 5 mm poly(methylmethacrylate) (Alcon) phacoemulsification lenses were inserted under viscoelastic material through 3 mm or 5 mm incisions respectively. Viscoelastic material was aspirated. Sutures were employed when a water tight section could not be demonstrated after inflation of the anterior chamber. Cefuroxime 100 mg and betamethasone 4 mg were injected into the subconjunctival space at the conclusion of surgery. A pad and Cartella shield were then placed over the eye. No ocular antihypertensive agents were used.

## FOLLOW UP

All patients were examined in the morning of the first postoperative day after removal of dressing and cleaning the eye. Unaided and pinhole Snellen visual acuities were measured. If the best corrected acuity was less than 6/12, dilated fundus examination was performed and the cause of visual deficit noted.

Intraocular pressure by Goldmann applanation tonometry was recorded. Wound integrity, anterior chamber activity, and lens position were also noted.

Our set postoperative protocol was neomycin, polymyxin B, and dexamethazone eyedrops (Maxitrol) four times daily. Any deviation from this was recorded. An outpatient appointment was made for 1 week later.

## INTERVENTION CRITERIA

The following intervention criteria were established at the start of the study.

- (1) To treat an intraocular pressure of 30 mm Hg or greater.

Department of  
Ophthalmology, Royal  
Free Hospital, London  
L Whitefield  
J Crowston  
B C Little

Correspondence to:  
Mr B C Little, Department  
of Ophthalmology, Royal  
Free Hospital, Pond Street,  
London NW3 2QG.

Accepted for publication  
17 October 1995

**Table 1** Grade of surgeon and numbers of operations performed

Grade of surgeon	Number of operations
Consultant	37
Senior registrar	20
Registrar	35
Senior house officer	8

- (2) To consider suture or resuture in any patient with wound leak.
- (3) To repair iris prolapse surgically.
- (4) To reposition dislocated intraocular lens.
- (5) To treat fibrinous uveitis.
- (6) To treat endophthalmitis

**Results**

One hundred operations were performed by four grades of surgeon (Table 1); 14 were under general anaesthetic and 86 were under local anaesthetic. Scleral tunnels were employed in 45 patients, and 55 had clear corneal three step incisions. Sutureless surgery was possible in 84 cases, 16 required a single 10/0 nylon cross stitch or infinity suture. Ninety four patients received non-foldable lenses and six had foldable lenses.

Visual acuity ranged from 6/4 to hand movements (Fig 1 and Table 2). Seventy four patients achieved vision of 6/12 or better. Causes of reduced vision in the remaining patients are shown in Table 3.

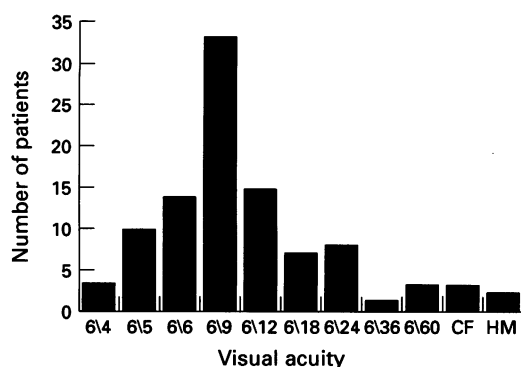
There were three interventions, all for patients with intraocular pressures greater or equal to 30 mm Hg (30, 34, and 36 mm Hg). These patients also had corneal oedema. They were treated with a single dose of oral acetazolamide 250 mg. All had normal intraocular pressures and clear corneae at examination 24 hours later. No further treatment was required.

The remaining 97 patients had no other significant complications requiring deviation from the set postoperative protocol regimen of neomycin, polymyxin B, and dexamethazone eyedrops four times daily.

**Discussion**

There are many reasons why surgeons like seeing their cases on the first postoperative day. For example:

- (1) Detection of complications and intervention if necessary.



**Figure 1** Postoperative vision (corrected).

**Table 2** Details of visual acuity

Corrected visual acuity	Number of patients
6/4	3
6/5 or better	13
6/6 or better	27
6/9 or better	61
6/12 or better	76
6/18 or better	83
6/24 or better	91
6/36 or better	92
6/60 or better	95
CF or better	98
HM or better	100

- (2) Opportunity for the surgeon to assess his/her surgical technique which is important for surgical education and development.

- (3) To assess/reassure patients whose vision does not meet expectations.

- (4) For historical reasons many patients expect to be seen.

The Royal College of Ophthalmologists has published general guidelines for cataract surgery and has recommended examination within 48 hours of surgery.<sup>4</sup> The most common immediate complications of cataract surgery include corneal oedema (9.6%), raised intraocular pressure (5.3%), wound leak (1.8%), iris prolapse (0.3%), and endophthalmitis (0.3%).<sup>5</sup> These data are for cataract surgery in the UK where extracapsular techniques predominate over others. However, the complication rates for extracapsular surgery and phacoemulsification appear to be similar. The incidence of ocular morbidity in patients undergoing uncomplicated phacoemulsification is not known. There is little published on the follow up requirements for such patients.

Our small study revealed no complications on the first postoperative day other than transient raised intraocular pressure. In our protocol we did not use any prophylactic topical or systemic ocular antihypertensive agents, which have been shown to minimise this pressure spike.<sup>6-8</sup> Even if, as with our study, prophylactic treatment is not administered, it has been shown that postoperative pressure spikes are usually self limiting<sup>9</sup> and therefore not of long term consequence after uncomplicated cataract surgery.

We suggest that in patients who undergo uncomplicated phacoemulsification and intraocular lens implant, it is safe and, therefore, reasonable to omit the first day postoperative check. Care should be taken preoperatively to counsel patients with pre-existing retinal pathology so that they have realistic expectations for postoperative vision. All patients would require preoperative explanation on instillation of drops and arguably may be given

**Table 3** Details of causes of reduced vision

Cause of reduced vision	Number of patients
Corneal oedema	10
Age related macula degeneration	4
Diabetic maculopathy	3
Posterior capsule plaque	2
Myopic degeneration	2
Vitreous haemorrhage	1
Optic atrophy	1
Amblyopia	1
Macula lamellar hole	1
Preretinal fibrosis	1

routine prophylaxis for raised intraocular pressure. In this way it would be possible in our unit to increase significantly the number of patients suitable for day-case care, without compromising the standard of patient care.

The authors have no financial interest in any products mentioned in this paper.

- 1 Ogg TW, Heath P, Brownlie G. A case for the expansion of day surgery. *Health Trends* 1989; 21: 114-7.
- 2 Strong NP, Wigmore W, Smithson S, Rhodes S, Woodruff G, Rosenthal AR. Day-case cataract surgery. *Br J Ophthalmol* 1991; 75: 731-3.
- 3 Davies B, Tyers AG. Do patients like day case cataract surgery? *Br J Ophthalmol* 1992; 76: 262-3.
- 4 *Guidelines for Cataract Surgery* 1995. London: The Royal College of Ophthalmologists.
- 5 Desai P. The National Cataract Surgery Survey: II. Clinical outcomes. *Eye* 1993; 7: 489-94.
- 6 Robin AL. Effect of topical apraclonidine on the frequency of intraocular pressure elevation after combined extracapsular cataract extraction and trabeculectomy. *Ophthalmology* 1993; 100: 628-33.
- 7 Ruiz RS, Wilson CA, Musgrove KH, Prager TC. Management of increased intraocular pressure after cataract extraction. *Am J Ophthalmol* 1987; 103: 487-91.
- 8 Hollands RH, Drance SM, House PH, Sculzer M. Control of intraocular pressure after cataract extraction. *Can J Ophthalmol* 1990; 25: 128-32.
- 9 Tomoda T, Tuberville AW, Wood TO. Timolol and post operative pressure. *Am Intra-Ocular Implant Soc* 1984; 10: 180-1.