CLINICAL STUDY

Domiciliary post-operative assessment following cataract surgery carried out by specialist nurses

L.R. WILLINS, B. GRANT, P.P. KEARNS

Abstract

Purpose **To establish whether first day post-operative review by ophthalmic trained nurses following day case cataract surgery is a safe and effective practice.**

Methods **A prospective study was undertaken of all patients undergoing day case cataract surgery followed by a domiciliary visit in 1996. Principal outcome measures were: (1) incidence of problems diagnosed by the nurses at the first visit, (2) the rate of referral to the hospital for medical review, (3) incidence of problems identified at the first clinic review (10–14 days later), with particular attention paid to any that might be attributed to an event 'missed' by the nurse at the first day, and (4) visual acuity at 3 months, to allow comparison with previously published national outcome measures.**

Results **From 281 cases, although nurses identified a problem in 11%, only 4.2% required referral back to medical staff from the domiciliary visit; 2.1% required re-admission over the first 2 weeks. Only one case (0.35%) was found to have a missed pathology; this patient had no long-term adverse outcome. Visual acuity outcomes at 3 months compared favourably with results from the National Cataract Surgery Survey.**

Conclusions **Domiciliary visits by ophthalmic trained nurses are a safe alternative to routine hospital review by medical staff.**

Key words Cataract surgery, Complications, Outcome, Post-operative assessment, Specialist nurse

L.R. Willins
B. Grant
P.P. Kearns
Eye Department
Queen Margaret Hospital NHST
Dunfermline, UK

Dr P.P. Kearns ✉
Eye Department
Queen Margaret Hospital NHST
Dunfermline KY12 0PU, UK
Tel: +44 (0)1383 623 623 extn 2716
Fax: +44 (0)1383 627 068
e-mail: patkearns2@aol.com

Presented at the spring meeting of the Scottish Ophthalmological Club at the Southern General Hospital, Glasgow, March 1997

Received: 23 November 1998
Accepted in revised form: 1 February 1999

In 1991 only 1% of cataract extractions were performed as day cases throughout Scotland.[1] The Study Group on the Management of Ophthalmology Services in Scotland recommended that this figure should rise to 30% by the end of 1993 and to 80% by the end of 1997.[2] In 1993 we conducted a pilot study to assess demand for day case cataract surgery in Fife. Patients being listed for cataract surgery were interviewed and 31% chose day case admission. At that time we did not have a dedicated Day Surgery Unit.

Our pilot study suggested that we could increase demand by providing transport to and from hospital, by arranging local pre-operative assessment clinics and by providing domiciliary review by nursing staff on the first post-operative day. This final provision seemed to be the main key to encouraging more to opt for day case surgery.

The Scottish Needs Assessment Programme (SNAP) study of Cataract Surgery in 1993[3] suggested that follow-up could be undertaken by skilled nursing staff with consultant back-up. We implemented this recommendation together with those from our own study and developed our Day Case Cataract Service.

Previous studies have already shown that visual results and post-operative complications following day case surgery are not significantly different from those after in-patient cataract surgery.[4,5] The aim of this study was to establish whether an experienced nurse carrying out the first-day review in the patient's home was a safe alternative to review by medical staff with a slit-lamp in hospital.

Methods

All patients undergoing day case cataract surgery between January and December 1996 in the Day Surgery Unit at Queen Margaret Hospital were recruited to this study. Patients were listed for cataract surgery following outpatient clinic attendance, at which time informed consent was obtained and a decision made with regard to type of anaesthetic to be used. However, no attempt was made at this stage to assess a patient's suitability or enthusiasm for day case surgery. The patient was given an information leaflet and an appointment to return at a later date for a pre-operative assessment, carried out by an Ophthalmic Nurse. At that time biometry measurements were made and a full social, medical and drug history taken to determine

Table 1. *Diagnosis in cases referred for medical review following first domiciliary visit*

Raised IOP	2
Corneal haze	1
IOL malpositioned	1
Wound leak	1
Large subconjunctival haemorrhage	1
No significant abnormality detected	1

IOP, intraocular pressure.

Table 3. *Diagnosis in those cases self-referring within the first 2 weeks*

Anterior uveitis	4
Irritation from conjunctival vicryl suture	2
Minor wound leak	1
Neomycin allergy	1
Mucopurulent discharge	1
Hypopyon	2
IOL in anterior chamber	1

suitability for day case surgery. The only absolute contraindications to day case surgery were insulin-dependent diabetes or any other medical problem that would require overnight stay following a general anaesthetic. While patients with glaucoma, previous drainage surgery or keratoplasty might be considered suitable for day case surgery, hospital review on the first post-operative day would be mandatory and therefore these were excluded from the study.

A full explanation of the operation and post-operative treatment were given, transport needs assessed and arranged through a local taxi company to ensure prompt arrival on the day of operation, and a date given for admission to hospital. All verbal instructions were supported by written instructions to take home. If possible relatives or carers were encouraged to attend this assessment.

On the day of surgery patients were admitted to the day surgery unit approximately 90 min pre-operatively. They then underwent standard extracapsular cataract extraction or phacoemulsification and intraocular lens implantation under peribulbar local anaesthetic. Only 6% had a general anaesthetic. Acetazolamide 500 mg was given orally to all patients on their return from theatre. Patients were then allowed home, often within the hour, with written instructions to contact the hospital if they developed severe pain or reduced vision; they were given telephone contact numbers. To ensure continuity of care, where possible the nurse carrying out the pre-operative assessment continued to care for that patient on the day of operation and at their domiciliary visit.

A data collection form was used documenting the operation, surgeon, intraoperative complications, results from previous surgery and coexisting ocular pathology.

Patients were reviewed at home the next day. After removal of the eye guard and bathing of the eyelids, the eye was examined using a pen torch to note corneal clarity, wound stability, anterior chamber depth and pupil shape. Visual acuity, unaided and with a pinhole, was checked using a reduced Snellen chart. Patients and relatives were shown how to instil drops and a district nurse contacted if help was required. The initial routine post-operative treatment regime was g. betamethasone/neomycin 4-hourly until review at 2 weeks. A patient felt to have raised intraocular pressure (on the basis of corneal oedema, degree of discomfort and digital examination) was given a single dose of acetazolamide 250–500 mg. If it was felt that the eye was unduly inflamed g. betamethasone/neomycin was commenced 2-hourly rather than 4 times daily. These patients were telephoned later in the day, and if they did not report a significant improvement in symptoms they were visited at home that evening or the next morning.

All patients were reviewed routinely at 2 weeks. Patients who had phacoemulsification and lens implantation were usually discharged to the optician at this visit. Most undergoing extracapsular lens extraction were reviewed again at 2–3 months.

Patient records for all patients in the study were reviewed at 3 months and examined for evidence of post-operative complications and final visual acuity.

Table 2. *Diagnosis in cases referred for medical review following the second domiciliary visit*

Hypopyon	1
Intravitreal haemorrhage	1
Corneal haze	1
Resolved raised IOP	1
No abnormality; anxious patient	1

IOP, intraocular pressure.

Results

Of 303 day-case cataract operations, notes were available on 281. One patient who self-referred overnight due to pain resulting from raised intraocular pressure was excluded. Sixty per cent underwent extracapsular lens extraction and 40% phacoemulsification. Ninety-four per cent had a local anaesthetic.

At the domiciliary visit 229 patients (89%) were considered to be problem-free. Of the remaining 51 cases, 7 were re-referred to hospital for medical review forthwith (Table 1). The remaining 44 were given either an additional 500 mg of oral acetazolamide or were instructed to commence steroid drops 2-hourly rather than 4 times daily as per protocol. These were then reviewed by telephone in the afternoon. Eight were considered to require a repeat domiciliary visit; 5 of these were subsequently referred to hospital for medical review (Table 2).

Table 4. *Complications detected at the first clinic visit*

Anterior uveitis	3
Neomycin allergy	2
Corneal oedema	1
Raised IOP	1

IOP, intraocular pressure.

Table 5. *Comparison of visual acuity outcomes in the present study and the National Cataract Surgery Survey*

Visual acuity	National Cataract Surgery Survey (%)	Fife audit (%)
6/6–6/12	79.7	90.7
6/18–6/24	11.4	3.6
6/36–6/60	5.2	4.3
3/60–HM	3.7	1.4

During the 2 weeks prior to the first post-operative review 12 (5.2%) of the original 229 patients considered 'problem-free' self-referred (Table 3) and at the first post-operative clinic visit a further 7 (3.1%) were deemed to have a problem (Table 4).

Our visual acuity outcomes compared favourably with the National Cataract Surgery Survey (NCSS) figures (Table 5). When those cases with coexisting ocular pathology were excluded, again our figures compared favourably, 96% of our patients achieving 6/12 or better compared with 90% in the NCSS. Our perioperative and post-operative complication rates were also very similar to those reported in the NCSS.[6]

Summary

In a group of 281 patients reviewed in their homes on the day following day case cataract surgery, nurses considered that 11% required additional intervention (administration of further acetazolamide and/or increased betamethasone, or further domiciliary review) and 4.3% were referred back for medical review. Of the 'problems' picked up at the first clinic visit or which prompted early self-referral, only in the case of the patient with the intraocular lens dislocated into the anterior chamber (Table 3) could this be considered a 'miss', i.e. a problem present on the first post-operative day that was overlooked by the nurse. After repositioning of the lens that patient made an uneventful recovery, achieving a visual acuity of 6/9.

Conclusion

We feel that this study shows that the use of ophthalmic trained nurses to review patients in their own home on the day following day case cataract surgery is a safe alternative to hospital review by medical staff.

Some studies[7,8] have questioned whether first day post-operative review is even necessary after uncomplicated cataract surgery and have shown no increase in morbidity in those whose first post-operative visit was 7 to 10 days after surgery.[7] We believe that we have demonstrated our policy to be a safe compromise between this and the Royal College of Ophthalmologists' recommendations of examination within 48 h of surgery.[9]

Many ophthalmology units serve communities with very different demographics from ours. Fife has a semi-rural population with many patients living outside the main urban centres, some as far as 65 km from the surgical base. However, in practice we have found it logistically easier and less costly to have a nurse visit six or more patients in a morning in their homes (particularly if operating lists are arranged to take account of locality) than to arrange for these patients to return to the hospital or a local clinic, or to arrange local overnight 'hotel' accommodation as is the practice in a number of centres. Patients are also far more willing to opt for day case surgery when this service is offered; currently over 80% of our patients are undergoing day case cataract surgery.

References

1. The Scottish Office Audit Unit. Day surgery in Scottish hospitals. Edinburgh: SOAU, 1992.
2. Scottish Health Service Advisory Council: Study Group on the Management of Ophthalmology Services in Scotland. Report on day case surgery for cataract (November 1992).
3. Scottish Forum for Public Health Medicine. Scottish needs assessment programme: cataract surgery, 1993.
4. Davies PD, Limacher E, Powell K. Outpatient cataract surgery 1982–1986. Eye 1987;1:728–34.
5. Watts MT, Pearce JL. Day case cataract surgery. Br J Ophthalmol 1988;72:897–9.
6. Desai P. The National Cataract Surgery Survey. II. Clinical outcomes. Eye 1993;7:489–94.
7. Tufail A, Foss AJE, Hamilton AMP. Is the first day post-operative review necessary after cataract extraction? Br J Ophthalmol 1995;79:646–8.
8. Whitefield L, Crowston J, Little BC. First day follow-up for routine phacoemulsification? Br J Ophthalmol 1996;80:148–50.
9. Guidelines for cataract surgery 1995. London: The Royal College of Ophthalmologists, 1995.