A nationwide survey of post-operative instructions following uncomplicated phacoemulsification cataract surgery

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CLINICAL STUDY

Abstract

Purpose **To determine the heterogeneity of post-operative instructions following uncomplicated phacoemulsification cataract surgery.**

Methods **A survey was sent to a random sample of 115 cataract centres in the United Kingdom. Eighty questionnaires were returned, corresponding to a response rate of 70%.**

Results **The time at which post-operative advice was given, the nature of post-operative problems, and advice regarding the instillation of post-operative eye drops were all very similar among centres. There was mild variability among centres in the advice given on post-operative analgesia, eye cleaning and hair washing. However, there were marked differences in the advice given to patients regarding how long an eyeshield should be worn, and also regarding daily activities such as lifting objects and driving. Thirty-five per cent of centres adopted a single post-operative review. No centre had more than three post-operative reviews for an uncomplicated phacoemulsification. The final refraction was conducted by at least 30% of centres within the first month, and by at least 92% within 2 months.**

Conclusions **Phacoemulsification with a self-sealing tunnel is now the technique of choice for an uncomplicated cataract extraction and is increasingly conducted on a daycase basis. However, our survey reveals that there is considerable heterogeneity in the postoperative instructions given to patients following this procedure, and we would suggest that considerable benefits would result from further work in this area. Standard guidelines would not only benefit the patient in terms of improved patient education and rehabilitation, but would also result in economic benefits from reduced post-operative visits.**

Key words Cataract, Nationwide survey, Phacoemulsification, Post-operative instructions

Phacoemulsification with a self-sealing tunnel is now the technique of choice in an uncomplicated cataract extraction, and is widely practiced in the United Kingdom.[1] This has resulted in a more rapid rehabilitation from surgery, with implications in terms of patient safety and satisfaction, as well as financial benefits. We conducted a survey regarding the post-operative advice given to patients undergoing uncomplicated phacoemulsification in a sample of cataract centres throughout the United Kingdom.

Methods

In December 2000 a questionnaire was sent to a random sample of 115 cataract centres in the United Kingdom conducting uncomplicated phacoemulsification. This random sample was selected from the Royal College of Ophthalmologists' Directory of Training Posts in Ophthalmology (2000–2001), ensuring that all geographical regions were equally represented. No distinction was made between teaching and district general hospitals. A total of 80 responses were received, a response rate of 70%. One centre responded with two advice sheets due to a difference of opinion between consultants. This was treated as two separate questionnaires. Only two of the respondents did not provide their patients with a printed advice sheet in addition to the verbal advice. All respondents were included in this survey. The aspects included in the questionnaire were as follows:

- The time and form in which the post-operative advice was given
- Advice regarding post-operative pain and analgesics
- Advice regarding post-operative problems
- Post-operative care, specifically the instillation of eye drops and use of an eyeshield

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- The resumption of post-operative activities involving straining and lifting
- Personal hygiene in the post-operative period
- Advice regarding driving
- The timing of the final post-operative refraction
- Frequency of post-operative visits

As well as completing the questionnaire, the cataract centres were also requested to enclose the standard post-operative advice sheets given to patients undergoing uncomplicated phacoemulsification. Although 78 (98%) of the 80 respondents provided a printed advice sheet, only 57 of the 80 respondents (71%) complied with this request. Seven centres (9%) were currently revising their post-operative instruction sheets and were therefore unable to include these in the questionnaires. Sixteen centres (20%) did not include the advice sheets in reply. Where there were discrepancies between the responses to the questionnaire and the printed advice sheet, we regarded the printed advice sheet as representing the standard advice given by that cataract centre.

Results

In our analysis of the data, we classified the aspects covered by our questionnaire into three groups, according to the degree of variability of the responses among different cataract centres:

1. Low variability was defined as more than or equal to 90% homogeneous responses.
2. Moderate variability was defined as more than 60% but less than 90% homogeneous responses.
3. High variability was defined as less than 60% homogeneous responses.

Post-operative instructions with low variability among centres

Three aspects revealed low variability among centres:

- *The time and form in which post-operative advice was given*: All the respondents gave post-operative advice on the day of discharge. In addition, 73 respondents (91%) also gave post-operative advice during the pre-operative assessment as well as the post-operative day itself. Seventy-eight respondents (98%) also provided a printed advice sheet to the patients.
- *Advice regarding post-operative problems*: Seventy-two of the respondents (90%) warned patients regarding visual disturbances and irritations. All centres (100%) warned patients to seek help if the pain became severe or the vision suddenly deteriorated, and 79 of the respondents (99%) provided patients with an emergency number to ring.
- *Post-operative instructions regarding the instillation of eye drops*: We did not survey the different regimes used by different centres. However, all centres gave post-operative advice regarding the frequency and duration with which eye drops should be used. All centres gave instructions to patients on how to instil the eye drops via one or more of the following methods: (1) personal demonstration with verbal instructions, (2) diagrams, (3) text, (4) patients practising with eye drops for a week pre-operatively.

Table 1. *Post-operative use of an eyeshield*

How long should the patient wear the shield for?	No. (%) of centres
No shield	5 (6%)
24 hours	14 (18%)
Few days	4 (5%)
1 week	6 (7%)
2 weeks	45 (56%)
4 weeks	4 (5%)
Non-specific advice	2 (3%)

Post-operative instructions with mild to moderate variability among centres

The advice given by different centres regarding post-operative analgesia and personal hygiene revealed a mild to moderate level of variability:

- *Advice regarding analgesia*: The most commonly advised analgesic is paracetamol, with 69 of respondents (86%) recommending its use. However, 20 centres (25%) also recommended that patients could use the analgesic of their own choice. Eleven centres (14%) recommended the use of aspirin and other non-steroidal anti-inflammatory drugs such as voltarol or brufen. Two centres specifically advised patients to avoid aspirin in the post-operative period.
- *Personal hygiene*: Seventy-two (90%) of the respondents permitted the patient to clean the operated eye if required. However, the advice regarding hair washing was more variable, with 52 of the centres (65%) permitting hair washing at any time and 15 centres (19%) advising patients to wait at least 1 week before commencing hair washing. Most centres advised a face-back technique. Four of the respondents (5%) advised patients to use an eyeshield during hair washing.

Post-operative instructions with high variability among centres

There was a high level of variability among centres regarding the post-operative advice given regarding the use of an eyeshield; daily activities involving straining and lifting; driving; and the period required before a patient could return to work. In addition, the pattern of post-operative visits and the timing of the final post-operative refractions were also highly variable.

For clarity these highly variable aspects have been tabulated to demonstrate the different responses:

- *Post-operative use of an eyeshield*: The advice given on the duration of use of an eyeshield ranged from no requirement at all to 4 weeks. The most common response (52/80; 65%) was to advise the patient to use the eyeshield for a 2 week period (Table 1).

Table 2. *Post-operative rest*

How long after the operation should the patient rest at home for?	No. (%) of centres
No restrictions	14 (18%)
24 hours	37 (46%)
Few days	5 (6%)
A week or more	8 (10%)
Non-specific advice	5 (6%)
No advice given	10 (13%)

- *Post-operative rest*: The advice given on resting at home ranged from no restrictions at all (14/80; 18%) to resting at home for more than a week. The most common response was to rest at home for 24 h (37/80; 46%) (Table 2).
- *Resumption of activities involving straining and lifting*: Advice given on straining and lifting ranged from no restrictions at all to refraining from such activities for more than 6 weeks. The most common advice given was to wait for 2 weeks (30/80; 38%) (Table 3).
- *Resumption of work (light clerical/heavy manual)*: The advice on returning to light clerical work ranged from no restriction at all to waiting for 3 weeks before returning to work. The most common response was to wait for 2 weeks (25/80; 31%). The advice given on heavy manual work could broadly be divided into two groups of opinion. The first group (39/80; 49%) advised patients to wait for 2 weeks before returning to heavy manual work, while the other group (32/80; 40%) advised the patient to wait for at least a month (Table 4).
- *Advice regarding driving*: The advice given on driving was very inconsistent between centres, with the majority of the responses (35/80; 44%) referring to visual acuity when advising a patient. Eighteen centres (14/80; 18%) advised the patient to wait for 1–2 weeks before resuming driving. The rest of the centres (17/80; 21%) did not advise the patient directly, but relied on the ophthalmologist to advise the patient during the first follow-up appointment (Table 5).
- *Frequency of post-operative visits and timing of final refraction*: The majority of the centres (42/80; 53%) required two or three post-operative follow-up visits, 28 centres (35%) adopting a single post-operative review 1–2 weeks following the procedure. None of the centres required more than three follow-up appointments following an uncomplicated phacoemulsification. At least 24 of the respondents (30%) conducted the final refraction within the first month, with 50 respondents (62%) conducting the final refraction between the first and second months. Seventy-four of 80 respondents (93%) would have completed the final refraction before the end of the second month (Table 6).

Table 3. *Resumption of activities involving straining and lifting*

How long after the operation should the patient refrain from straining and heavy lifting?	No. (%) of centres
No restrictions	7 (9%)
2 weeks or less	30 (38%)
A month	21 (26%)
6 weeks or more	12 (15%)
Non-specific advice	4 (5%)
No advice given	6 (7%)

Table 4. *Resumption of work*

How long after the operation should the patient wait before returning to work?	No. (%) of centres	
	Light clerical work	Heavy manual work
No restrictions	15 (19%)	Nil
Few days	8 (10%)	Nil
1 week	19 (24%)	Nil
2 weeks	25 (31%)	39 (49%)
3 weeks	1 (1%)	Nil
4 weeks or more	Nil	32 (40%)
Doctor to advise	6 (8%)	5 (6%)
Non-specific advice	5 (6%)	2 (3%)
No advice given	1 (1%)	2 (3%)

Other post-operative instructions noted from the respondents but not covered in our questionnaire

- Thirteen centres advised their patients to refrain from swimming for a period ranging from 1 to 6 weeks.
- Ten centres advised patients to refrain from contact sports and golf for a period ranging from 2 to 6 weeks.
- Seven centres advised patients to avoid bending for the first 2 weeks following an uneventful phacoemulsification.
- Three centres instructed patients not to wear eye makeup for a period ranging from 2 to 6 weeks.
- Two centres instructed patients not to lie on the operated side for a week.
- One centre instructed patients not to make hot tea and another centre told patients to avoid cooking with oil.
- One centre instructed patients not to smoke or drink alcohol.
- One centre told their patients to refrain from sex for 2 weeks, and 1 centre permitted sex but only in a passive role.

Table 5. *Advice regarding driving*

How long after the operation should the patient wait before resuming driving?	No. (%) of centres
Depends on VA	
In general	16
Legal limits specified	11
VA of the unoperated eye	8
Total	35 (44%)
1 week	7 (9%)
2 weeks	7 (9%)
2–4 weeks	4 (5%)
Doctor to advise	17 (22%)
Non-specific advice	5 (6%)
No advice given	3 (4%)

VA, visual acuity.

Table 6. *Frequency of post-operative visit and timing of final refraction*

	No. of centres (%)
No. of follow-up appointments	
1	28 (35%)
2 or 3	42 (53%)
Non-specific advice	3 (3%)
Doctor to advise	7 (9%)
Final refraction	
Within the first month	24 (30%)
4–8 weeks	50 (62%)
Doctor to advise	6 (8%)

Discussion

Our survey revealed considerable variability between centres, particularly regarding advice concerning rest, physical activities, the use of a protective eyeshield, frequency of post-operative visits and the timing of the final refraction. The advice differed considerably from the patient information of understanding cataract issued by the Royal College of Ophthalmologists and the Royal National Institute for the Blind.[2] Factors that should be considered when advising patients on post-operative activities include research evidence,[3] medical legal literature[4] and individual variations in post-operative pain, mental and physical capacity.

Sutureless phacoemulsification is now the technique of choice in an uncomplicated cataract extraction, and is widely practised in the United Kingdom. This technique has resulted in a reduction in complications such as hyphaema,[5,6] wound dehiscence[7,8] and iris prolapse,[9] and also results in quicker wound stabilisation,[10] less post-operative astigmatism,[11] more rapid visual rehabilitation and earlier refraction stabilisation,[12,13] thus reducing the number of post-operative visits.[14]

It is apparent from our survey that a number of centres (28/80; 35%) adopted the strategy of a single post-operative review within 1–2 weeks of surgery. However, despite the widespread adoption of sutureless phacoemulsification as the preferred technique for cataract extraction, our survey demonstrates that post-operative instructions given to patients are not necessarily commensurate with the rapid visual rehabilitation brought about by this technique.

Perkins and Olson[3] investigated the value of post-operative instructions restricting physical activity following uncomplicated phacoemulsification. No shield was prescribed for a cohort of 216 patients undergoing uncomplicated phacoemulsification, who were not restricted from any normal physical activity which did not produce pain. No complications were found in these patients related to post-operative activity. Levin[15] observed 3000 of his patients who underwent uneventful phacoemulsifications over a period of 4 years between 1987 to 1991. He did not give instructions to patients to restrict activities such as golf, bowling, dancing, tennis, sexual intercourse or any activity that involved the Valsalva manoeuvre. No shield was given and no post-operative complications related to physical activities arose.

These studies and observations were made over a decade ago, when Perkins and Olson were using 5 mm scleral tunnels in phacoemulsifications.[3] Most cataract centres in the United Kingdom currently employ smaller, self-sealing 3 mm corneal incisions. With progressive improvements in surgical techniques, we suggest that an evidence-based re-evaluation of current post-operative instructions is required. From our survey, it appears there is considerable variability between centres, with advice based on the legacy of a period when more invasive methods such as extracapsular extraction were the norm.

In particular, it appears as though restrictions on normal physical activities are not necessary as they do not appear to be associated with any complications. Bending was not shown to be associated with wound dehiscence in extracapsular cataract extraction where a much larger incision was made.[16] From the research evidence,[3] it is also unclear whether the extended use of any eyeshield confers any benefit to the patient. The heterogeneity of advice between centres regarding activities involving lifting and straining is attributable to the lack of evidence-based research in this area.

Two centres advised patients against the use of aspirin. From the research evidence,[17] aspirin was not shown to be associated with post-operative haemorrhagic complications[18] nor was it associated with intraoperative bleeding during cataract surgery.[19]

Instructions on driving should be based on research and medical legal evidence.[4,20] The legal standard required for driving a private car is the ability to read a number plate at 20.5 m. The guidelines issued by the Driver and Vehicle Licensing Agency suggest that this binocular vision corresponds to a level of visual acuity between 6/9 and 6/12 vision.[21] However, if there is a sudden deterioration in the vision of the fellow eye, the DVLA advises avoiding driving until the patient has compensated for this change in vision. Advice on this issue may best be given by the ophthalmologist,[4] as other factors may have to be taken into consideration such as physical health, the level of pain, and orientation following surgery.[22,23]

With increasing advances in surgical technique, recent authors[24,25] such as Edwards *et al.*[26] and Tan *et al.*[27] have questioned the need for routine review on the first post-operative day following uncomplicated phacoemulsification. Instead, Tan *et al.* have suggested a single post-operative review at 1–2 weeks supplemented with a patient-initiated review in the interim. The dependence on patient-initiated review, however, requires the need for clear and consistent post-operative guidelines for patients,[28] developed from evidence-based research. Our survey suggests that there is a need for further work in this area, which would have benefits in terms of improved rehabilitation and economic benefits in terms of reduced patient visits.

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