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Recovery after day surgery: a survey of anaesthetists regarding return of home fitness and street fitness

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Abstract

Anaesthetists from three hospitals were asked for their opinions on various aspects of day surgical care, particularly return to normal activities. There were marked differences in opinion, particularly with the role of the carer and the speed of return to the activities currently prohibited for 24 h. There was no consensus as to how often the patient should be checked upon by the carer. More than half of the anaesthetists chose to adhere to the current guidelines of avoiding driving for 24 h. Two-thirds of respondents were happy for their patients to return to work the day after surgery.

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1. Introduction

Modern day case surgery has a history of safety, with minimal increase in major morbidity or mortality in the peri-operative period [1]. This has been, in part, due to the enormous efforts spent by the providers of day surgery services in patient education. Integral in this education process are instructions on avoiding potentially dangerous activities. Ogg first highlighted the potential for harm in 1972 [2]. In this landmark paper, he discovered that out of a 100-patient cohort, 31% traveled home without a responsible escort; 9% of car-owners drove themselves home, 39% had driven within 12 h and 73% within 24 h of their operation. In addition, 6% of patients consumed alcohol within the first 24 h. In the intervening 30 years, the process of patient educa-

tion and compliance has improved, as recently demonstrated [3,4]. The instructions we give to our patients have remained largely unchanged despite dramatic improvements in anaesthetic agents and techniques available for patients undergoing day surgery. As providers of day surgery, we must consider the implications of all the prohibitions we detail to our patients. This study uses a questionnaire to assess the attitudes of anaesthetists from three British hospitals with regards to the day surgery process.

The three centres were chosen in an attempt to produce data representative of British anaesthetists. The Addenbrooke's Day Surgery Unit (Cambridge) is a pioneering, long-established day surgery unit affiliated to a university teaching hospital. The unit at Stoke-on-Trent is in a large urban district general hospital. The unit at King's Lynn represents a medium large rural district general hospital.

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2. Method

Questionnaires (Appendix A) were sent to all anaesthetists working at Cambridge, Stoke-on-Trent and King's Lynn. The return of these questionnaires was entirely voluntary. As the process was entirely anonymous, no attempt could be made to follow-up non-responders.

The results from the returned questionnaires were analysed using the spss 9.0 statistical package.

3. Results

A total of 168 questionnaires were sent to all the anaesthetists at three hospitals—70 to Cambridge, 70 to Stoke-on-Trent and 28 to King's Lynn. There were 70 returns in total (41.67%) 30 from Cambridge, 26 from Stoke-on-Trent and 14 from King's Lynn.

Of the respondents, 43 (61.4%) were consultants, nine (12.9%) senior specialist registrars, seven (10%) junior specialist registrars, five (7.1%) senior house officers and six (8.6%) non-consultant career grade anaesthetists.

Of the 49 non-trainees surveyed, 39 had regular lists with patients presenting for day surgery. The cohort included 24 anaesthetists (including five trainees) with a special in day surgery. Seventeen anaesthetists had attended day surgery conferences in the past.

With regards to pre-emptive analgesia, 49 anaesthetists (70%) believed it to be a concept that is applicable to clinical practice. The proportion was similar (70.6%) in those anaesthetists that had attended day surgery conferences. All but three of the anaesthetists that believed in this concept routinely administered non-steroidal anti-inflammatory drugs (NSAIDs) or performed nerve blocks prior to incision.

Rectal NSAIDs were used routinely by 42 anaesthetists, oral NSAIDs were used by 40 anaesthetists, and nerve blockade was practiced by 54 anaesthetists.

There was marked disagreement amongst the anaesthetists with regards to the duration of time that a patient should be kept in the day surgery unit after

Table 2
Minimum and maximum ages for carers

Minimum age (years)		Maximum Age (years)	
Age	Number of anaesthetists	Age	Number of anaesthetists
16	10	60–65	8
18	35	70–75	6
20–21	5	80	3
25	1	No maximum	33
Adult	9	Adult	9
Fit	1	Fit	3
Left Blank	9	Left Blank	8

completion of surgery (Table 1). Twenty out of the 62 who responded felt that there should be no minimum time. 26 anaesthetists favoured 2 h or less. Out of the 17 anaesthetists who had attended day surgery conferences, 11 favored 2 h or less. Only four anaesthetists supported the fast track theory of no minimum time, whilst one favored 2.5 h. One anaesthetist failed to respond to this question.

Table 2 shows the distribution of responses for the minimum and maximum age limits with regards to the carer. A majority felt that the minimum age should be 18 years and that there should be no maximum age.

There was more agreement as to the location of the designated carer. Sixty-four (91.4%) anaesthetists would be happy for the carer to be within the same house. Only two felt they should be in the same room. Surprisingly, one anaesthetist was happy with a carer that was readily available by telephone! Three anaesthetists left this question unanswered.

The least agreement was with the frequency that patients should be checked upon. Twenty-four respondents (34.2%) failed to answer this question! The responses ranged from 'no need to check' (three anaesthetists) to check every 15 min! There was some reference made to variations taking into account the health of the patient and the type of surgery performed. Some mentioned a lack of necessity in checking the patients overnight.

The recovery time thought to be necessary to allow the patient to drive, drink alcohol, make decisions, look after children, cook, venture outdoors, take sedatives and be safely left alone are shown in Table 3.

With regards to returning to work, 25 (35.7%) felt the patients should not return to work the day following day surgery. Nine (12.9%) anaesthetists were happy for the patients to return to work as long as their operations were done the previous morning. Twenty-four (35.7%) of the anaesthetists would be happy for their patients to work the following day, regardless of the time of the

Table 1
Minimum duration of stay (hours) after operation

Time (h)	Number of anaesthetists
No minimum	20
1	12
2	14
3	6
4	9
6	1
Left blank	8

Table 3
Number of anaesthetists indicating the time required for adequate recovery to participate in the various activities

	Drive	Drink alcohol	Make decisions	Care for children	Cook	Go out	Take sedatives	Be alone
Immediately	0	1	2	1	0	0	0	0
Later same day	0	10	6	6	6	2	5	1
Next morning	14	17	16	17	17	20	14	32
After 24 h	44	33	35	34	38	39	36	27
After 48 h	11	8	9	10	8	6	13	8
Left blank	1	1	2	2	1	3	2	2

operation. Eight (11.4%) said the fitness to work depended on the jobs involved. Pilots and bus drivers were some of the occupations mentioned that were felt to need a longer recovery. One anaesthetist felt that anaesthetists could not safely return to work within 24 h. Three anaesthetists left this question unanswered.

One of the anaesthetists from Cambridge declined to complete the questionnaire beyond stating his grade (consultant) and the fact he did not regularly anaesthetise day cases.

4. Discussion

It is clear that there is very little agreement between anaesthetists as to the length of time required for recovery from day surgery under general anaesthesia. Certainly many anaesthetists indicate that the type and duration of surgery, combined with an individual patient's pre-morbid condition has an influence on the recovery time. This is in keeping with current thinking on 'fast-track' recovery, which suggests that over adherence to rigid recovery protocols is the major factor preventing the earlier discharge of day case patients. Some anaesthetists would argue that the use of ultra-short acting anaesthetic agents could permit recovery within hours of surgery, so waiting the full 24 h is unnecessary.

Some information can be obtained from clinical studies comparing the effects of alcohol and anaesthetic agents on the results of psychometric tests. We should be able to extrapolate from the time taken for anaesthetic agents to produce less effects on psychometric testing as compared with the legal driving limit for alcohol, to guide us in advising a safe time for the resumption of driving [5,6]. Obviously, this will not take into account disability or cognitive defects arising from the use of opioid analgesia and post-operative pain. These studies also employed fit, young subjects who were anaesthetized for limited periods of time. The sample size of each group was also small. It would, therefore, be unrealistic to directly translate such results into modified instructions after day surgery.

The Driver and Vehicle Licensing Authority (DVLA) of Britain has produced guidelines for fitness to drive with regards to various medical conditions [7]. With regards to driving after surgery, there is no need to notify the DVLA unless the medical condition was likely to affect safe driving for longer than 3 months. Patients should discuss the time of safe return to driving with their doctors. The DVLA advises such decisions be based upon recovery from anaesthetics (sedation and cognitive impairment), the distracting effect of pain, impairment due to analgesia (sedation and cognitive impairment) as well as any physical restrictions due to the surgery. The driver is ultimately responsible and must be able to demonstrate fitness to drive if challenged by the law. They suggested that drivers confirmed cover with their insurance companies prior to taking the wheel. There was no advice regarding the period of avoidance of driving for patients undergoing minor procedures lasting a few minutes with minimal post-operative pain.

Despite the advice against making important personal or business decisions for the first 24 h post-operatively, 64.3% of anaesthetists are happy for their patients to return to work the following day. Some add provisos to this, particularly in terms of type of job. Patients whose jobs involve the transportation of the public were thought to be most at risk of endangering themselves and others, so should stay home. One respondent felt that it would be dangerous for anaesthetists to return to work the following day. This exclusion may be questionable as the regular inhalation of varying amounts of volatile anaesthetic agent is, after all, an occupational hazard.

Controversy is greatest in terms of the role of the carer. As pointed out by Smith [8], problems encountered overnight may be noticed by a carer in the same room, but are most likely to be missed by a carer elsewhere in the same house. To expect the carer to be awake in the same room for 24 h is unrealistic. Even though the consensus is that there should be someone in the same house, no one really knows how often the patient should be checked for problems, particularly when both patient and carer are asleep. The high rate of non-response to the question about frequency of check-

ing on the patients (34.2%) probably reflects a lack of confidence about what might constitute a sensible suggestion.

The age range of carers is also an unresolved problem. Most agree that only responsible, fit adults should undertake the role, but there is no consensus as to when adulthood actually begins. Certainly some teenagers are more responsible than many young adults are. With the increase in older patients having day surgical procedures, there will also be an increase in the age of their carers. Do we then have to assess the fitness of the carers as well as that of the patients presenting for day surgery?

Of interest as well is the consultant anaesthetist who refused to complete the questionnaire beyond stating his grade and lack of interest in day surgery. It is likely that the non-responders are also in this category but did not even return the form. Considering that a major proportion of surgical work occurs on an ambulatory basis, certainly all anaesthetists are likely to encounter day cases even within in-patient lists, or outside their National Health Service practice. This lack of interest purely because they do not routinely anaesthetize day cases in a dedicated setting makes rapid discharge after inpatient surgery potentially flawed.

Although our data were collected from anaesthetists of all grades from three different hospitals, the information derived may not be truly representative in view of the poor return rate. There could be several reasons for this. There is certainly an overwhelming amount of data collection going on within the anaesthetic community, and little time given to administration during 'office hours'. Such surveys are often low priority and, therefore, not given the required attention. The questionnaires were sent out in the month of August, traditionally the month for holidays. Finally, the questionnaire asks some probing questions about the management of day surgery patients that many providers of day surgery would find difficult to answer. This could have deterred anaesthetists who have little interest in the subject from responding.

Adequate pain control is vital for successful discharge after day surgery. Although studies have examined the possibility of improving this by the use of pre-emptive analgesia, there is little evidence that this concept successfully reduces the post-operative analgesic requirements. We sought to identify if our cohort of anaesthetists appreciated the flaws associated with this theory. Most of the respondents seemed to be unaware that there is little substantive evidence for pre-emptive analgesia in clinical practice. There is often confusion about the meaning of the term pre-emptive analgesia. Strictly speaking, this describes the administration of analgesia (nerve blocks or oral analgesia) before the start of surgery and is associated with less analgesia

requirements in the post-operative period [9]. This is thought to be due to prevention of activation of pain pathways and may be difficult if not impossible to achieve. Some anaesthetists interpret the term more loosely and mean simply putting the block in at the beginning rather than at the end of surgery. Our results may be difficult to interpret as we did not define the term in our questionnaire. The confusion about the definition of pre-emptive analgesia may result in an increase in the use of multi-modal analgesia prior to surgery. This should reduce the need for intra-operative and post-operative opioids, resulting in improved post-operative analgesia with less opioid-induced emetic symptoms.

In conclusion, there is little agreement amongst anaesthetists as to how quickly patients should be allowed to resume normal daily activities after day surgery under general anaesthesia. Despite the widespread use of short acting anaesthetic agents in day surgery, we continue to give our patients the same advice that was disseminated in the early days of day surgery. Research into the degree of psychomotor impairment after anaesthesia gives some indication that we may be able to speed up the recovery process. It appears that for now at least, the guidelines are unlikely to be reduced to under 24 h as patient safety remains our main priority.

Economic pressures mean that day surgery increasingly encompasses not only the fit patient having minor surgery but also more intermediate procedures in less fit patients. There is likely to be wide variation in the recovery rate after day surgery under general anaesthesia. Whilst we are able to advise that day surgery patients are accompanied home and overnight post-operatively, a single set of guidelines giving advice about post-operative activity (particularly driving) is probably not very sensible. It may be wiser, especially given the current interest in patient information and consent, to be more open about our lack of knowledge in the field of psychomotor recovery from general anaesthesia and leave the responsibility very firmly with the patient to resume normal daily activities when they feel able to do so. Many over the counter medicines bear labels with the wording '*Warning: may cause drowsiness. If affected, avoid driving and operating machinery*'. Perhaps we should simply send patients home with the same advice.

Acknowledgements

We wish to thank the anaesthetists who took the trouble to fill in and return the questionnaires.

Appendix A

Grade of anaesthetist: _____

Do you regularly anaesthetise day cases? Yes / No

Have you a particular interest in day surgery? Yes / No

Have you ever attended a day surgery conference? Yes / No [No: _____]

Do you believe in the concept of pre-emptive analgesia? Yes / No

Do you employ the following pre-incision:

PR Voltarol / Oral NSAIDS / Nerve blocks

Is there a minimum time you feel patients need to be observed before discharge?

No / Yes (_____ hours)

How do you interpret the role of the carer?

Age range? _____

In the same room / In same house / Within 5 minutes of phone call / Unnecessary

How often should the patient be checked? _____

Assuming a procedure under general anaesthesia lasting under 1 h was performed, and no surgical restrictions are present, what is the earliest time would you be happy for the following to occur?

	Immediately	Later same day	Next day (<24 hours)	After 24 hours	After 48 hours
Drive					
Drink alcohol					
Make decisions					
Care for children					
Cook / Iron					
Go out alone					
Take sedatives					
No longer need carer					

Would you be happy for a patient to go back to work the next day?
 No/Only if op was in the morning/Yes, as long as feeling well.

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