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Patient Anxiety and Conscious Surgery

A b s t r a c t

The amount of surgery undertaken on the conscious patient is increasing. However, many patients are anxious and resistant to such surgery. Patients (n=214) were surveyed to determine their related apprehensions. Being awake, feeling or seeing the body cut open and experiencing pain all increased anxiety. The potential for insufficient information provision was also a source of concern. Formal management of intra-operative apprehension may help limit anxiety and expel apparent misapprehensions.

B a c k g r o u n d

The aim of this study was to uncover aspects patients find anxiety provoking whilst undergoing surgery with local/ regional anaesthesia. This was required as the number of surgical procedures now possible in day and short stay surgery is increasing (Howat et al 2006, Jacquet et al 2006) together with the number of surgical procedures possible using local or regional anaesthesia (Zanchetta & Bernstein 2004, Raeder 2006, Ternisien et al 2006, Delikoukos & Gikas 2007, Weidmann & Grundy 2008).

Operating theatre design and function has traditionally been associated with the care of the unconscious patient (Essex-Lopresti 1999) although with the envisaged decline in the number of patients undergoing general anaesthesia, care of the conscious patient will become a more central feature of theatre nursing (Chit Ying et al 2001). It has been suggested that arriving at the theatre door (Kennedy et al 1992) together with the experience of the theatre environment, that is, the sounds of the operating room (Jakobsen & Fagermoen 2005), monitor alarms, surgical instruments being unpacked (Hankela & Kiikkala 1996), narrowness of the table and low temperature, all give rise to increased anxiety during surgery under local/ regional anaesthesia (Chit Ying et al 2001). Aspects associated with the actual surgery such as the surgeon's touch (De Andres et al 1995), possible repeated needle punctures

(Gajraj & Sidawi 1993, Koscielniak-Nielsen et al 2002, Matthey et al 2004) or potentially insufficient use of local anaesthesia (Callesen et al 2001) have also given rise to increased apprehension.

As a result of such concerns the majority of patients prefer general anaesthesia to local anaesthesia (Shevde & Panagopoulos 1991, Papanikolaou et al 1994). Again, common reasons for not wanting local anaesthesia were the experience of injections, dislike of being awake in the theatre and the wait between administration of anaesthesia and commencement of surgery (Gajraj et al 1995, Rees & Tagoe 2002). However, it is suggested that such experiences can be improved by providing explanations and enhancing the theatre environment (Gnanalingham & Budhoo 1998, Jakobsen & Fagermoen 2005). For example, Whittle et al (2005) suggested a comfortable operating table, keeping the patient warm, a dedicated person for patient communication and minimising pain and discomfort.

The potential pain associated with the injections, restricted communication and the uncomfortable theatre environment (temperature, noise and narrow table) therefore appear formidable barriers for patients when considering local/ regional anaesthesia. As the operating theatre has historically been linked with the unconscious patient, the peri-operative practices associated with the conscious patient may require greater scrutiny. A study exploring the psychological experience of the 'awake' patient in theatre was therefore deemed necessary. The research question was therefore 'What environmental factors influence anxiety for the 'awake' adult patient undergoing, elective day surgery'.

M e t h o d

A questionnaire was constructed and utilised within a larger study examining the wider issues of anxiety associated with the clinical environment, hospital personnel and general and local/ regional anaesthesia (n=673). However, this paper will only consider the questions relating to the effect of the environment on patient anxiety

when experiencing local/ regional anaesthesia (Table 1). The questionnaire was compiled using evidence gained from the literature together with previously undertaken studies within this field (Mitchell 1997, Mitchell 2000, Mitchell 2006). Moreover, a pilot study was undertaken utilising the first 10% of respondents. This resulted in minor amendments to the questionnaire prior to continuation of data collection. All items on the questionnaire were structured using a Likert Scale format, for example, very anxious, a little anxious, made no difference, a little calm, very calm or never thought about it.

TABLE 1
INTRA-OPERATIVE APPREHENSION.

Intra-operative apprehension
1. How would your anaesthetist explaining your anaesthetic before going to theatre affect your anxiety?
2. How would a nurse explaining your anaesthetic on the ward before going to theatre affect anxiety?
3. How would being told how long your anaesthetic will last affect your anxiety?
4. How would being told how soon the numbness will take to wear off affect your anxiety?
5. How would being told how soon you will be able to eat and drink again affect your anxiety?
6. How would always being told what was to happen next affect your anxiety?
7. How did the thought of possibly needing more than one injection to numb your skin affect your anxiety?
8. How did the thought of possibly needing a drip (intravenous infusion) affect your anxiety?
9. How did the thought of being awake during the operation affect your anxiety?
10. How did the thought of possibly hearing what the doctors and nurses were saying in theatre affect your anxiety?
11. How did the thought of possibly feeling what the surgeon was doing in theatre affect your anxiety?
12. How did the thought of possibly seeing your body 'cut open' affect your anxiety?
13. How did the thought of the operation possibly being more painful because you were awake affect your anxiety?
14. How did the thought of the numbness possibly wearing off before the operation was finished affect your anxiety?
15. How did the thought of possibly feeling 'closed in' (claustrophobic) during the operation affect your anxiety?
16. How did the thought of the pain possibly being worse afterwards because only a part of your body was being made numb affect your anxiety?

Data were collected from four public Day Surgery Units over a two-year period (2005 - 2007). All four Day Surgery Units were situated within a large City in the Northwest of England and all surgeons, anaesthetists and nursing staff gave their consent to the study prior to local Ethics Committee approval. A convenience sample

of patients meeting the inclusion criteria (non life-threatening, intermediate surgery, no history of chronic physical or mental health, English speaking, 18 years upwards and not undergoing ophthalmic or dental surgery) were invited to participate. (ophthalmic and dental patients were excluded as such patients were deemed to possibly experience additional anxieties resulting from the type of surgery). The staff within each Day Surgery Unit invited patients on the day of surgery (who met the inclusion criteria) to take home the questionnaire. The questionnaires were to be completed at home by the patients 24 - 48 hours after surgery and return by mail in the pre-paid envelope provided.

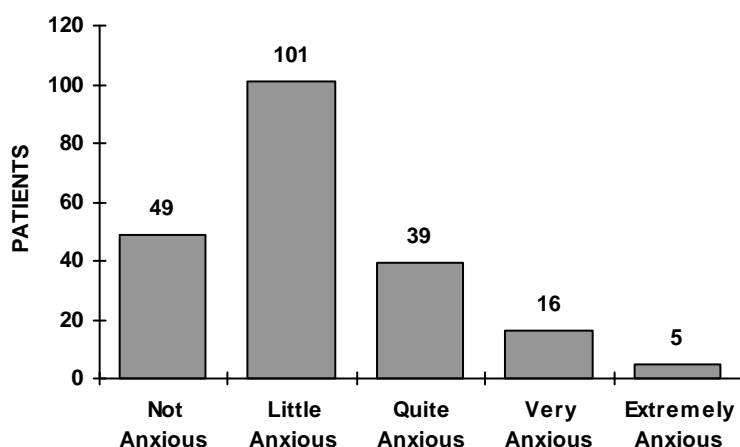
R e s u l t s

Two-hundred and fourteen patients undergoing surgery with local/ regional anaesthesia completed this part of the survey. Patients underwent a variety of surgical procedures with General Surgery (hernia repair, cholecystectomy) (37%) and Orthopaedic Surgery (35%) being the most frequent. The number of patients experiencing a degree of anxiety on the day of surgery was 77% (Graph 1). Many patients experienced anxiety resulting from the thought of being awake (60%), possibly feeling the surgeon (60%), potentially seeing their body cut open (47%), the thought of the numbness wearing off too quickly (53%) or the thought of local/ regional anaesthesia being more painful (61%). Patients stated it would be calming if the nurse explained events (54%), the anaesthetist explained events (64%) and they were informed of what would happen next, that is, the sequential order of events (56%) (Mitchell 2005).

In addition to the descriptive statistics, further scrutiny of the data was undertaken utilising factor analysis. Exploratory factor analysis seeks to summarise all the data uncovered and reduce the findings into smaller coherent portions. Following factor analysis, two components or factors were established and referred to as 'Anaesthetic Information Provision' and 'Intra-operative Apprehension'. Questions relating to the

nurse and anaesthetist providing information and explanations (Table 2) were given the overall title of 'anaesthetic information provision' as during factor analysis such aspects were all positively related. Similarly, questions relating to being awake, seeing, hearing, feeling (Table 3) were given the overall title of 'intra-operative apprehension' as again during factor analysis such aspects were positively.

GRAPH 1
ANXIETY ON DAY OF SURGERY (n=210).



These two new variables of 'anaesthetic information provision' and 'intra-operative apprehension' were then entered into a multiple regression analysis. Multiple regression analysis is employed to help determine if an overall level of anxiety can be predicted by the two new variables created during factor analysis (anaesthetic information provision and intra-operative apprehension). This indeed was the case and 'anaesthetic information provision' together with 'intra-operative apprehension' were deemed to be accurate predictors of increased anxiety on the day of surgery (Mitchell 2008). Therefore, it can be confidently stated that increased patient anxiety prior to conscious day surgery is directly related to the issues collectively referred to here as 'anaesthetic information provision.' and 'intra-operative apprehension' (Tables 2 & 3).

TABLE 2
ANAESTHETIC INFORMATION PROVISION.

Anaesthetic Information Provision
Anaesthetist explaining the anaesthetic Nurse explaining the anaesthetic Informed how long anaesthetic will last Informed how long numbness will last

TABLE 3
INTRA-OPERATIVE APPREHENSION.

Intra-operative Apprehension
Thought of needing more than 1 injection Thought of needing intravenous infusion Thought of being awake during operation Thought of hearing during operation Thought of feeling surgeon during operation Thought of seeing body cut open Thought of RA/ LA being more painful Nurse explaining the anaesthetic.

Discussion

Firstly, a number of limitations to the study may have influenced the results. Data collection was undertaken using a questionnaire that had not been previously utilised or validated. Therefore, questions could have been included that participants did not find relevant and other more pertinent items may have been excluded. Participants may therefore not have been able to express all their views. However, the questionnaire was rigorously constructed from the available literature and previous studies (Mitchell 2005). Secondly, only 41% of participants responded which could have limited the information obtained. However, such a response rate is not uncommon in postal surveys, especially with a sample population who quickly resume their 'normal' lifestyle (Clark et al 2002).

The research question was 'What environmental factors influence anxiety for the 'awake' adult patient undergoing, elective day surgery'. Although patients were undergoing local or regional anaesthesia, 77% experienced some degree of anxiety (Graph 1). Clearly, therefore, the majority of patients experiencing local or regional anaesthesia were somewhat anxious. Apprehension arose largely in two distinct areas referred to here as anaesthetic information provision (Table 2) and intra-operative apprehension (Table 3). These two aspects were derived from a combination of exploratory factor analysis and multiple regression analysis.

The first distinct area of patient anxiety concerned anaesthetic provision information. For example, being informed of how long the anaesthetic will last and

how long the local or regional anaesthetic would take to dissipate (Table 2). Other studies have also demonstrated the value of this kind of pre-operative information provision (Tong et al 1997, Jakobsen & Fagermoen 2005) although frequently such information may, in the initial stages of treatment, become marginalised as the patient remains focused upon the impact of the actual surgery (Parroy et al 2003). However, as the date of surgery approaches the patient may begin to consider the wider aspects of surgery, that is, the experiences of local or regional anaesthesia. Gradually patients realise, for example, that they may not be able to move their anaesthetised limb in the usual manner and may therefore wish to have a greater understanding of their anaesthetic (Bhattarai et al 2005, Mauleon et al 2007). This may necessitate a more formal approach to information provision in regard to the use of local or regional anaesthesia (Lack et al 2003). Previous studies have revealed that being informed in advance of anaesthesia has aided the more effective management of anxiety (Lee et al 2003, Johansson et al 2005), that is, the sequential order of events being explained and patients being provided, where possible, with some choice (McKenna 1997, Gillies & Baldwin 2001, Ward et al 2007). Also, possible fears relating to the use of local or regional anaesthesia can be explored and common misapprehensions discussed (Mauleon et al 2007, Rudolfsson et al 2007). Moreover, during this period patients can be informed of the safe and effectiveness of the drugs employed (Royal College of Anaesthetists and Association of Anaesthetists Great Britain and Ireland 2003).

The second distinct area of patient anxiety concerned misconceptions associated with intra-operative events, that is, being awake and thereby possibly being susceptible to seeing, feeling or hearing the surgical procedure (Table 3). Similar findings have also been revealed by Costa (2001) when questioning day surgery patients. Patients were apprehensive about their anaesthetic because of the fear of dying, losing physical and/ or emotional control or the possibility of seeing their body being cut open. Other studies have also revealed similar findings concerning the possibility of feeling the surgeon (De Andres et al 1995), viewing surgical events, hearing discussions in the operating theatre (Gajraj et al 1995) or experiencing an increased level of pain (Gajraj & Sidawi 1993, Koscielniak-Nielsen et al 2002). Although many of these apprehensions are unfounded, the patients in the present study were clearly unaware of this and therefore quite apprehensive. Indeed, Matthey et al (2004) suggests that the public's fears and perceptions regarding regional anaesthesia are greatly distorted.

Clinical Recommendations

Communication with the nursing staff and anaesthetist prior to the induction of anaesthesia was viewed by patients as beneficial in that it helped to reduce the anxiety associated with conscious surgery. This has been suggested as an essential element of intra-operative care (Leinonen et al 1996, Leinonen & Leino-Kilpi 1999, Rudolfsson et al 2003). However, over three-quarters of the patients scheduled for local or regional anaesthesia in the present study had little knowledge regarding intra-operative events.

Patient interaction with the nurses and anaesthetist prior to surgery is vital as they frequently seek answers to a number of questions (Lithner & Zilling 2000, Kindler et al 2005). Furthermore, the period immediately prior to surgery may be the first time the patient has had the opportunity to meet with their anaesthetist (Parroy et al 2003). During this period, patients' perceptions of the safe and effective use of local/regional anaesthesia can again be discussed (Lee & Gin 2005). Moreover, discussing safety and the potential risks are an essential part of informing patients about their anaesthesia (Lack et al 2003). This is also an opportunity to help dispel misapprehensions and limit catastrophising thoughts (De Andres et al 1995, Gajraj et al 1995) (Table 4).

TABLE 4
PERI-OPERATIVE INFORMATION PROVISION

	Intervention
Anaesthetic Information Provision	<p>Prior to the day of surgery information provided regarding anaesthesia to help dispel misapprehensions and limit catastrophising thoughts.</p> <p>Explore possible common anxiety provoking issues associated with surgery on the conscious self such as being awake, seeing, hearing, feeling.</p> <p>Emphasis upon comfort, safety and effective anaesthesia.</p>

The lack of pre-operative information provision clearly lead to much anxiety and was the catalyst for numerous intrusive catastrophising thoughts. Helping to reduce such uncertainty and minimising the impact of the human physiological stress-response is one of the foundations upon which modern elective surgery is being built (Wilmore 2002). Patients should therefore be prompted regularly regarding their comfort, safety, level and source of anxiety immediately prior to, and during, surgery (Nijkamp et al 2002). Controlled local/ regional anaesthesia can be emphasized together with the effectiveness of the drugs employed. Distraction techniques

(Hankela & Kiikkala 1996, Diette et al 2003, Gilmartin & Wright 2007) and the use of intra-operative music (Chit Ying et al 2001, Yung et al 2003) have also been suggested to aid intra-operative apprehension. A number of studies have further suggested the need for a dedicated nurse to be free to interact with the patient throughout the intra-operative period (McCarthy et al 2004, Marran 2005). Respect and attention to intra-operative physical comfort have been strongly recommended (Hadjistavropoulos et al 2001) and the continued development of a 'conscious patient friendly' theatre environment (Lehrner et al 2000, Stirling 2006, Lorenz 2007, Stirling et al 2007) is vital if more patients are to experience (or be encourage to experience) local and regional anaesthesia (Hankela & Kiikkala 1996) (Table 5).

TABLE 5
INTRA-OPERATIVE INTERVENTION

	Intervention
<p>Intra-operative</p> <p>Apprehension</p>	<p>Interaction with patient immediately prior to anaesthesia.</p> <p>Regular prompting regarding, comfort, temperature, anxiety, catastrophising thoughts, experience of pain or feeling surgeon.</p> <p>Emphasize anaesthesia will not 'wear off' too soon although immediate action will be taken in this unlikely event.</p> <p>Simple methods of distraction (if desired) e.g. talking or music via headphones.</p> <p>Dedicated nurse to interact throughout surgery regarding comfort, temperature, physical environment and potential noise e.g. explain noises such as monitors beeping.</p>

Conclusion

The aim of the study was to uncover aspects patients find anxiety provoking whilst undergoing surgery with local/ regional anaesthesia. Two areas were identified which gave rise to considerable anxiety for the majority of patients - anaesthetic information provision and intra-operative apprehension. Therefore, it can be confidently stated that anxiety prior to local/ regional anaesthesia will be associated with a lack of accurate information (length of anaesthesia, period of numbness) and misconceptions regarding intra-operative events (feeling, seeing, hearing surgery). It is recommended that communication takes place prior to the day of surgery to help explore and dispel misapprehensions and emphasize safe, controlled anaesthesia. In addition, the utilisation of a dedicated intra-operative nurse and development of a 'patient friendly' theatre environment must be pursued. Future studies may wish to investigate a comparison between use of a dedicated nurse, distracting techniques,

intra-operative music (via headphones) and 'conscious patient friendly' theatre environments.

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