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Recall of preoperative anaesthesia information in Hong Kong Chinese patients

香港華人患者對手術前提供的麻醉資料的記憶

Objective. To evaluate the ability of patients to recall information provided during a preoperative visit.
Design. Qualitative study.
Setting. Regional hospital, Hong Kong.
Patients. Sixty patients scheduled for elective surgery under general anaesthesia or central neuro-axial block.
Main outcome measures. Satisfactory recall of preoperative information, defined as the ability to remember at least 75% of adverse effects described.
Results. Fifty-nine (98.3%) patients were satisfied with the preoperative information. Forty-two (70%) patients rated anaesthetic complications as important. At the interview on the day of the operation, 57 (95%) patients had satisfactory recall of the information provided. Eighty-five percent of patients remembered that the information was provided by an anaesthesiologist. After the operation, of those who experienced adverse effects, 48 (96%) patients remembered being told to anticipate the adverse anaesthetic event. Univariate analysis found that age, sex, education level, occupation, and the modality of anaesthesia did not affect patient recall of preoperative information on the day of surgery or 1 day postsurgery.
Conclusion. There was satisfactory recall of preoperative information by the majority of patients in the study. Most patients expressed satisfaction with the information provided.

目的：評估患者對手術前探訪期間所提供資料的回憶能力。
設計：定性研究。
安排：地區醫院，香港。
患者：六十名預定在全身麻醉或中樞神經軸麻醉下進行選擇性外科手術的患者。
主要結果測量：可以回憶手術前提供的至少 75% 不利作用的能力作為滿意指標。
結果：五十九名患者(98.3%)對手術前所提供的資料感到滿意。四十二名患者(70%)認為麻醉併發症重要。在手術當天會見時，57名患者(95%)對所提供的資料有滿意的回憶。 85% 的患者記得資料是由麻醉科醫生所提供的。手術後，在那些經歷不利作用的患者中，48名(96%)記得曾提及預期會有不利的麻醉結果。單變量分析發現，年齡、性別、教育水平、工作類別和麻醉形式並不影響患者在手術當日或手術後一天，對手術前所提供資料的回憶。
結論：本研究中大多數患者對手術前所提供的資料有滿意的回憶能力。大多數患者對所提供的資料均表示滿意。

Key words:
Anesthesia;
Memory/drug effects;
Recall

關鍵詞：
麻醉；
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Introduction

Informed consent is an important issue in medicine, especially given increasing medicolegal litigation. Although a medical practitioner may have provided adequate information to the patient and obtained informed consent before a medical procedure, patient factors such as the ability to understand and recall the information provided, may result in a medicolegal dilemma.

Impairment of memory has been demonstrated following both general and local anaesthesia when sedative and amnesic medications have been administered.[1] The ability of patients to recall information provided and explained

to them during the preoperative visit has been reported to be unsatisfactory. As many as 39% of patients in one study were not able to remember accurately what they were asked.[2] In another study, 26.9% of patients could not recall being assessed by the anaesthetist.[3] This has significant medicolegal implications because the reliability and validity of the informed consent obtained for anaesthesia and surgery may be challenged.

In this study, the ability of Hong Kong Chinese patients to recall information provided to them during the preoperative visit was evaluated.

Methods

Approval for the study was obtained from the Alice Ho Miu Ling Nethersole Hospital Research Ethics Committee. Sixty patients aged between 18 and 80 years, who were scheduled for general surgical, orthopaedic, ophthalmic, or ear, nose, and throat surgery under general anaesthesia or central neuro-axial blocks were enrolled in the study. Patients scheduled for day surgery or for operations utilising other regional blocks, and those taking medications which may affect memory or recall were excluded.

All patients were seen by one of the investigators preoperatively on the evening before the scheduled operation and asked if they would like to receive detailed information on the anaesthetic procedure. Patients who wished to receive detailed information were invited to participate in the study. After obtaining informed consent, the patients were advised that they were to participate in three interviews: one on the preoperative day, one on the day of the operation, and one on the day after the operation. The investigators provided each patient with a standardised set of information on general or spinal anaesthetic techniques,[4,5] as well as an explanation of the potential risks and four common adverse effects of the planned anaesthetic technique to be used (Box). Any other information of relevance to the patients' pre-existing medical condition was also provided.

Patient data including age, sex, education level, employment, and operation data, such as the type of surgery and anaesthetic technique were recorded at the preoperative visit. On the morning of the operation, a second investigator interviewed the patient to assess recall of the anaesthesiologist's visit and the four adverse effects explained during the preoperative visit. If the patient was able to remember three or more of the adverse effects, recall was considered satisfactory. The patient was asked to rate his/her satisfaction with the information provided at the preoperative visit, and whether he/she would rate potential surgical, anaesthetic, or both types of complications as important. The patient was again interviewed on the day after the operation to determine if any adverse effects had occurred and to assess recall of preoperative information regarding these adverse effects. At both subsequent interviews patients were asked whether they remembered the staff who provided earlier information. A third investigator conducted the third interview. All questions were structured and standardised.

Summary of preoperative anaesthetic information given to patients

Anaesthetic management
Description of general, spinal, or epidural anaesthetic techniques

Potential adverse effects
General anaesthesia: fatigue, sleep disturbance, sore throat, nausea and vomiting
Regional anaesthesia: back pain, headache, urinary retention, limb numbness

Demographic and operative data were analysed to determine if any factors affected recall. Parametric data were analysed using the Student's *t* test, while non-parametric data were compared using the Chi squared test. Significant variables were then analysed using multiple logistic regression analysis where appropriate.

Results

All patients expressed the desire to receive detailed information on the anaesthetic technique and agreed to participate in the study. Forty-eight patients received general anaesthesia, whereas nine patients received subarachnoid and three patients epidural anaesthesia. Demographic and operative data are shown in Table 1. Fifty-nine (98.3%) patients were either satisfied or very satisfied with the preoperative information provided regarding the anaesthetic technique and associated risks. Eighteen (30%) and eight (13%) patients rated surgical and anaesthetic complications, respectively, as more important. The remainder rated both complications as equally important.

At the second interview on the day of operation, 57 (95%) patients recalled that an anaesthesiologist had visited them on the previous (preoperative) day (Table 2). Two patients

Table 1. Patient demographic and clinical data

Patient data	Patients, n=60 No. (%)
Sex	
Male	32 (53)
Female	28 (47)
Education	
None	9 (15)
Primary	14 (23)
Secondary	33 (55)
Tertiary	4 (7)
Employment	
Unemployed/retired	27 (45)
Craft and plant workers	16 (27)
Service workers	4 (7)
Clerical workers and students	11 (18)
Professionals	2 (3)
Anaesthetic technique	
General anaesthesia	48 (80)
Central neuro-axial block	12 (20)
Operation	
Major	23 (38)
Intermediate	25 (42)
Minor	12 (20)
Mean age (years)	43.9 (16.7)*

* Standard deviation is shown in brackets

were unsure, and one patient denied any preoperative visit by the anaesthesiologist. All 57 patients who recalled the visit were able to satisfactorily recall the information provided to them. Eighty-five percent of these patients recalled that the information was provided by the anaesthesiologist. Univariate analysis found that recall of preoperative information on the day of surgery did not differ according to the age, sex, education level, or occupation of the patient, or the modality of anaesthesia used (Table 3).

After surgery, 50 (83%) patients experienced some adverse effects in the subsequent 24 hours (Table 4). Of these patients, 48 (96%) remembered that they had been told to anticipate these events. Forty-seven patients recalled that the information on adverse effects had been provided by the anaesthesiologist. Recall of preoperative information 24 hours after surgery did not differ according to age, sex, education level, or occupation of the patient, or the modality of anaesthesia used.

Discussion

The purpose of this study was to evaluate the adequacy of recall of information provided to Hong Kong Chinese patients during the preoperative visit. On the day of operation, 95% of the patients recalled that an anaesthesiologist had visited them on the preoperative day and were able to recall the information provided to them. Similarly, in the postoperative period, most of the patients who remembered being told to anticipate the adverse effects they were experiencing, recalled that they had been told about these effects by the anaesthesiologist. This was in contrast with previous reports, with one study showing that 26.9% of Caucasian patients did not remember being assessed by an anaesthesiologist[3] and a further study indicating that 39% of patients could not remember what was discussed.[2]

The difference in the findings in this study may reflect the different criteria used to define satisfactory recall. In this study, recall was deemed satisfactory if the patient remembered at least three of the four adverse effects described during the preoperative visit. This simple, yet specific criterion may facilitate patient recall of information. Notwithstanding, this forms part of the core information provided to patients in daily clinical practice when obtaining informed consent. The inclusion of the technical anaesthetic information as one of the criteria was considered. However, it was felt that patient recall of four adverse effects was a challenging enough task given the large load of surgical, nursing, and other administrative information given to patients during the perioperative period. Such information overload may negatively affect the recall of specific information by patients.

Providing preoperative information and an explanation of the perianaesthetic course is essential when obtaining informed consent. One survey completed has shown that those patients who received an information sheet on anaesthetic management and complications preoperatively, showed a significantly deeper understanding of anaesthesia when interviewed between the third and tenth day after

Table 2. Preoperative recall of patients

Preoperative recall	Patients, n=60 No. (%)
Recall of anaesthesiologist visit	
Yes	57 (95)
No	1 (2)
Don't know	2 (3)
Satisfactory recall of adverse effects	
Yes	57 (95)
No	3 (5)
Recall of who gave the information	
Anaesthesiologist	51 (85)
Surgeon	2 (3)
Don't know	7 (12)

Table 3. Evaluation of patient factors that may affect recall of preoperative information

Factor	Recall on the operative day			Recall at 24 hours after operative day		
	Yes	No	P value	Yes	No	P value
Sex			0.239			0.577
Male	31	1	-	27	5	-
Female	25	3	-	25	3	-
Age (years)			0.136			0.573
≤20	6	0	-	6	0	-
21-50	34	1	-	30	5	-
51-70	14	2	-	14	2	-
>70	2	1	-	2	1	-
Education level			0.311			0.802
None	7	2	-	8	1	-
Primary	14	0	-	13	1	-
Secondary	32	1	-	28	5	-
Tertiary	4	0	-	4	0	-
Occupation			0.728			0.657
Unemployed/retired	24	3	-	22	5	-
Craft and plant workers	16	0	-	14	2	-
Service workers	4	0	-	4	0	-
Clerical workers and students	11	0	-	10	1	-
Professionals	2	0	-	2	0	-
Anaesthetic technique			0.554			0.347
General anaesthesia	46	2	-	45	3	-
Central neuro-axial block	11	1	-	12	0	-

Table 4. Recall of information on adverse anaesthetic events

Postoperative recall	Patients, n=60 No. (%)
Experienced an adverse effect	
Yes	50 (83)
No	10 (17)
Recalled preoperative explanation of adverse effects	
Yes	48 (80)
No	12 (20)
Recalled who provided the explanation	
Anaesthesiologist	47 (78)
Surgeon	5 (8)
Don't know	8 (13)

the operation.[6] The information provided did not appear to increase the anxiety of the patients. Conversely, the survey revealed that patients who were anxious about anaesthesia before the operation had a greater need for detailed printed information compared with those who were not anxious.

Factors including older age, impaired cognitive function, below-average intellectual abilities, and the belief that health is not within their control, have been reported to limit patient recall of information given.[7] This study, however, did not find any effect of patient factors on the quality of recall, either in the preoperative or the postoperative period. This may be due to the relatively small sample size in the study. The small sample, combined with the large number of patients with satisfactory recall, made it difficult to examine any differences between patients with adequate and inadequate recall. Also, in assessing ability to recall side-effects, direct questioning was used, which might have introduced bias. In addition, patients' cognitive abilities and health beliefs were not assessed and thus the effect of these factors on patient recall could not be determined.

The fact that nearly all patients recalled the anaesthesiologist's visit and that anaesthetic information was provided by the anaesthesiologist emphasises the importance of the preoperative anaesthesiologist's visit. In many countries, patients expect anaesthetic-related information from the anaesthesiologist during a preoperative visit. Ninety-eight percent of patients in this study were either satisfied or very satisfied with the preoperative information provided regarding the anaesthetic technique and its risks. This result was consistent with current trends in other parts of the world. Studies from countries such as Australia, Scotland, Canada, Denmark, Singapore, and Japan have shown that patients have a strong desire to be informed about anaesthesia and its risk.[8-10]

Although patients had satisfactory recall of preoperative information 1 day after the operation, these results could not be extrapolated to a later date because recall may deteriorate with time. Furthermore, the results in this study showed a small portion of patients with unsatisfactory recall even before the operation. In view of this, it is a good practice to document clearly and completely all information that has been given to the patient. Often in medicolegal litigation, the trial may take place many years after the event and accurate patient memory can only be determined against the record kept by the doctor in question.[11]

Conclusions

This study found the preoperative and postoperative recall of information provided in the preoperative period to Hong Kong Chinese patients was satisfactory. Patients also expressed satisfaction with the information provided on anaesthetic techniques and adverse events that might occur. The study highlighted the important role of the anaesthesiologist in providing preoperative information to surgical patients.

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