

Effectiveness of pre-anesthetic video information on patient anxiety and economical aspects

ABSTRACT

Background: Adequate preoperative information can lessen patient anxiety. Delivering sufficient information during a personal interview, however, is time consuming, and therefore a relevant economical aspect. We investigated whether video information given to the patient before the pre-anesthetic interview has an influence on the patient's anxiety and the duration of the interview.

Method: We randomized 302 patients undergoing different types of anesthesia. In all, 151 patients watched a short video with general information about the anticipated anesthesia procedure. Afterward, all patients had a standard pre-anesthetic interview. Patients' anxiety and satisfaction with pre-anesthesia care were assessed after the interview using a visual analogue scale. The duration of the interview was documented. Student *t*-test and $P < 0.05$ for differences between the groups.

Results: There was no difference in gender, age, ASA physical status, previous anesthesia experience, and the planned anesthesia procedure between the two groups. No difference in anxiety and satisfaction with pre-anesthesia care was observed. The duration of the pre-anesthetic interview was also not different between the groups.

Discussion: Preoperative multimedia information did not reduce anxiety or increase the patient satisfaction undergoing anesthesia. The video containing general information did not save time in the pre-anesthetic interview.

Key words: Economy; patient anxiety; patient satisfaction; pre-anesthetic information; video

Background


Many patients experience substantial anxiety before operations. It is reported to affect 60%–80% of all surgical patients. It may even cause patients to refuse planned surgery.^[1] Higher anxiety levels prior to surgery are associated with pathophysiological responses such as arrhythmias and hypertension. The requirement of anesthetic drugs is increased by anxiety. To produce unconsciousness,

higher doses are needed and the risk of awareness is higher.^[2] Anxiety worsens the patients' perception of pain and increases requirements for postoperative analgesia. Anxiety decreases patients' overall satisfaction with perioperative care. Lowering preoperative anxiety can improve surgical outcomes, shorten hospital stay, and reduce lifestyle disruption.^[1]

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Most patients want to be informed about anesthesia even if this includes relevant complications.^[3] It has been shown that the delivery of more information not necessarily lowers the anxiety level. Information on the planned anesthesia procedure is considered positive. The mentioning of rare and severe complication, however, increases the patients' anxiety.^[4] Adult ambulatory patients want to know details about the process of anesthesia, whereas cardiac patients rather want less information.^[5] Parents especially want to be informed about serious but rare risks for their children.^[6] In general, the higher the assumed risks are the less information is demanded by the patient.^[5]

Adequate preoperative information can reduce the patients' anxiety.^[1] The ideal method to deliver this information is unknown. Written information is an effective way but not all patients are literate enough to read and understand information provided; additionally, different patients will retain information to a very variable extent.^[7] Multimedia information as short video has been subject of various randomized trials.^[8-11] However, conflicting results exist mostly because of a variability in study populations, differences in methodology and multimedia format.

A pre-anesthetic interview is legally necessary. Only an informed patient can give consent to anesthesia. Simple written information or a video without any chance to address individual aspects is often not considered to be enough for a legally binding consent. Therefore, a personal interview remains necessary. On the other hand, pre-anesthetic interviews account for about 20% of the anesthesiologist's working time. A reduction of the pre-anesthetic interview time by prior video information would have relevant economic consequences.^[12,13]

In this trial, we examined the effect of a short video sequence providing general information about standard anesthesia procedures and possible complications.

Aim was to evaluate whether the provision of video information has an influence on the standard pre-anesthetic interview. Anxiety levels and patient's overall satisfaction with preoperative care as well as the duration of the pre-anesthetic interview were compared between a group with prior video information and another group without video information.

Method

After approval of the local ethics committee (University Würzburg; AZ 185/07) 302 consecutive patients undergoing elective surgery at the University Hospital

Würzburg, Würzburg, Germany were examined from February 1 to April 30, 2007. All adult patients were included. Exclusion criteria included the inability to read, insufficient language skills, significantly impaired eyesight or hearing, and an existing neurologic or psychiatric disorder.

Patients were randomly allocated to a video group or control group (not watching the short video). The video was supplied by the proConcept Verlag, Erlangen, Germany. Researchers and patients were blinded to group allocation until the start of the investigation.

Patients in the "video group" viewed a 10-15-minute video containing general information on the planned anesthesia procedure. Participants in the video group were advised that they could stop the video at any point.

Three consultant anesthesiologists performed all preoperative interviews. To replicate our standard practice and make the study applicable to real practice, the interviewers were not specifically told how to explain the procedures. Duration of the interview was timed and documented.

After the interview, the patients' anxiety was measured using a visual analogue scale (VAS) as described previously.^[14] In our study, a scale of 0–10 cm was used to quantify anxiety levels. One end of the scale was marked with 'no anxiety' and the other end as 'maximum anxiety imaginable'. In the same manner, overall satisfaction with the pre-anesthetic care was measured and documented.

Patients in the video group were additionally asked to indicate their satisfaction with the video.

Duration of the interview, anxiety levels, and overall satisfaction with preoperative care after the interview were compared between the two groups using the Student *t*-test. $P < 0.05$ was considered statistically significant.

Results

A total of 302 consecutive patients were included in the study. Among them, 155 patients watched the video while 147 did not; 10 patients (2 in the "video" group and 8 in the "no-video" group) could not be included in the evaluation due to missing data.

The two groups did not differ in age, gender, ASA physical status, and previous anesthesia experience. [Table 1] No difference was seen for type of planned anesthesia or surgery and time from enrolment to surgery.

There was no difference in duration of the interview between the two groups. Measured anxiety levels and overall satisfaction were also not different between the group with and the group without video [Table 2].

Feedback from the video group indicated that 90% were satisfied with the short video and valued it as helpful source of information.

Discussion

One important result of this study was that pre-anesthetic video information on anesthesia does not influence the patient's preoperative anxiety level or satisfaction.

This can be explained by various aspects. In general, viewing an informative video about anesthesia can improve patients' perception and understanding.^[15] A higher level of information, however, not necessarily has an influence on the patient's anxiety level. Depending on the content and makeup of the video anxiety can even be increased. It was shown that information on the anesthesia procedures are considered helpful while the demonstration of rare and serious complications is considered to have a negative influence.^[1,5] From a legal standpoint, however, the patients have to be informed. It has been shown that a video could reduce some difficulties of informing patients with low levels of literacy. Up to 35% of the patients and 30% of the elderly have insufficient or marginal functional literacy.^[4] Standardized information with a video might have legal advantages because it can easily be reproduced.

The pre-anesthetic video did not change the overall satisfaction with preoperative care. Patient's satisfaction is influenced by many different aspects. Of those, only a few can easily be controlled. Often it is not easy to differentiate between the preoperative care given by the surgical staff and care provided by the anesthesia staff. Compared to the entire preoperative workup, the patients go through a short video most likely does not have a relevant influence.

Another finding was that the duration of the interview was not influenced by the video. Various prior studies showed that an information video could shorten the duration of the interview. This would have a relevant influence on economical aspects. About one-fifth of the working time of anesthesiologists is used for pre-anesthetic interviews.^[13] Therefore, even a short reduction of interview time could be considered relevant. In this study, a significant reduction of the needed time was not seen. However, it was not evaluated how the time was distributed during the interview in the two groups. Anesthesiologist in the video group might have had more time to cover individual aspects and answer specific questions. It could also be possible that various questions only arise due to the information delivered in the video.

A relevant benefit of the video is the standardization compared to a routine interview. The risk of forgetting important aspects is minimized. It is also easily reproducible and can be considered legally binding.^[16] Moreover, the anesthesiologist does not necessarily repeat the information multiple times. By eliminating this tedious work, more time could be spent on the individual medical issues and concerns of the patient.

Despite the additional effort of a special video, the patient's overall satisfaction with pre-anesthesia care was not influenced. The value of a personal interview cannot be replaced.^[17] Only personal interaction can navigate the patient towards anesthesia.^[18] However, a video can fill the waiting time before the interview. The repeated information could increase the patient's general perception of anesthesia as an integral part of patient care.

An integral part of the pre-anesthetic interview is the delivery of information. An advantage of a face-to-face interview is the feedback the interviewer gets. Compared to a simple video, it is easier to evaluate whether the information was essentially understood.

A limitation of this study is that it was not examined how much information was retained by the patients.^[15] Because of the study design, it cannot be concluded whether video

Table 1: Demographic data (data as mean +/- standard deviation), no differences between the two groups was seen

	Age [years]	Gender [m: f]	ASA physical status	Previous anesthesia
no-video (n=139)	57 +/- 15		I 15; II 90; III 34	yes 82; no 57
Video (n=153)	52+7 - 16		I 18; II 95; III 40	yes 88; no 65

Table 2: Results of the intervention (data as mean +/- standard deviation), no differences between the two groups was seen

	Duration of interview [min]	Anxiety [0-10]	Overall satisfaction [0-10]
no-video (n=139)	13.4 +/- 5.9	3.9 +/- 2.7	8.3 +/- 2.6
Video (n=153)	13.2 +/- 6.8	3.9 +/- 2.4	8.1 +/- 3.0

group patients had additional information and if this had an influence on anxiety. Another limitation in this trial was that, apart from a previous experience with anesthesia, we did not investigate other sources of information that may have influenced the patients' knowledge. Patients might interpret accurate or inaccurate information from the media, friends or nursing staff. Anxiety was not measured before the video or interview. The evaluation at different time points could help to differentiate the influence of various interventions on the patient's anxiety. It seems possible that a well-informed patient has a higher anxiety level being aware of the possible complications. In prior studies, the video was associated with better recall of the risk information and misconception and, to a lesser extent, process of anesthesia.^[8]

Anesthesia, however, is just one cause of anxiety; we did not examine the effect of further potential sources of anxiety. The underlining medical condition, surgery with its potential complications, and a hospital stay itself contribute to the patient's anxiety.^[1]

Conclusion

In summary, pre-anesthetic video information given to patients has if at all minimal effect on patient anxiety and satisfaction. The duration of the interview is not necessarily shortened. Video information can be an addition to the preoperative workup. Video can standardize the basic information supplied. Anesthesiologists must still provide the patient-specific information that is required for informed consent.

Abbreviations

ASA American society of anesthesiologists
VAS visual analogue scale.

Declarations

Ethics approval and patients consent to participate - were obtained.

Consent to publish

Not applicable.

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Conflicts of interest

There are no conflicts of interest.

References

1. Shafer A, Fish MP, Gregg KM, Seavello J, Kosek P. Preoperative anxiety and fear: A comparison of assessments by patients and anesthesia and surgery residents. *Anesth Analg* 1996;83:1285-91.
2. Garden AL, Merry AF, Holland RL, Petrie KJ. Anaesthesia information--what patients want to know. *Anaesth Intensive Care* 1996;24:594-8.
3. Lonsdale M, Hutchison GL. Patients' desire for information about anaesthesia. Scottish and Canadian attitudes. *Anaesthesia* 1991;46:410-2.
4. Gillies MA, Baldwin FJ. Do patient information booklets increase perioperative anxiety? *Eur J Anaesthesiol* 2001;18:620-2.
5. Miller KM, Wysocki T, Cassady JF Jr, Cancel D, Izenberg N. Validation of measures of parents' preoperative anxiety and anesthesia knowledge. *Anesth Analg* 1999;88:251-7.
6. Cassady JF Jr, Wysocki TT, Miller KM, Cancel DD, Izenberg N. Use of a preanesthetic video for facilitation of parental education and anxiolysis before pediatric ambulatory surgery. *Anesth Analg* 1999;88:246-50.
7. Courtney MJ. The effect of a preanaesthetic information booklet on patient understanding and satisfaction. *N Z Med J* 1997;110:212-4.
8. Salzwedel C, Petersen C, Blanc I, Koch U, Goetz AE, Schuster M. The effect of detailed, video-assisted anesthesia risk education on patient anxiety and the duration of the preanesthetic interview: A randomized controlled trial. *Anesth Analg* 2008;106:202-9, table of contents.
9. Kakinuma A, Nagatani H, Otake H, Mizuno J, Nakata Y. The effects of short interactive animation video information on preanesthetic anxiety, knowledge, and interview time: A randomized controlled trial. *Anesth Analg* 2011;112:1314-8.
10. Done ML, Lee A. The use of a video to convey preanesthetic information to patients undergoing ambulatory surgery. *Anesth Analg* 1998;87:531-6.
11. Zvara DA, Mathes DD, Brooker RF, McKinley AC. Video as a patient teaching tool: Does it add to the preoperative anesthetic visit? *Anesth Analg* 1996;82:1065-8.
12. Bauer M, Weber W, Bach A. [Cost control in the hospital. An introduction to cost and performance management]. *Der Anaesthesist* 1999;48:910-6.
13. Schuster M, Standl T, Wagner JA, Berger J, Reimann H, Am Esch JS. Effect of different cost drivers on cost per anesthesia minute in different anesthesia subspecialties. *Anesthesiology* 2004;101:1435-43.
14. Kindler CH, Harms C, Amsler F, Ihde-Scholl T, Scheidegger D. The visual analog scale allows effective measurement of preoperative anxiety and detection of patients' anesthetic concerns. *Anesth Analg* 2000;90:706-12.
15. Snyder-Ramos SA, Seintsch H, Bottiger BW, Motsch J, Martin E, Bauer M. Patient satisfaction and information gain after the preanesthetic visit: A comparison of face-to-face interview, brochure, and video. *Anesth Analg* 2005;100:1753-8.
16. Lee A, Chui PT, Gin T. Educating patients about anesthesia: A systematic review of randomized controlled trials of media-based interventions. *Anesth Analg* 2003;96:1424-31, table of contents.
17. Snyder-Ramos SA, Seintsch H, Bottiger BW, Motsch J, Martin E, Bauer M. [Development of a questionnaire to assess the quality of the preanesthetic visit]. *Anaesthesist* 2003;52:818-29.
18. Whitty PM, Shaw IH, Goodwin DR. Patient satisfaction with general anaesthesia. Too difficult to measure? *Anaesthesia* 1996;51:327-32.