



Original contribution

Patient satisfaction with continued versus divided anesthetic care[☆]

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Abstract

Study Objective: To evaluate patient acceptability of continued versus divided anesthetic care.

Design: Patient satisfaction ratings with continuous and divided anesthetic care were assessed by patient questionnaire. In addition, the effect of training anesthesia personnel in communication regarding divided anesthesia care was examined.

Setting: University medical center.

Patients: 654 consecutive patients scheduled for elective surgery.

Measurements and Main Results: Overall postoperative patient satisfaction was high and not different between patients experiencing continued or divided anesthetic care ($P = 0.97$). Asking patients before their operations about the importance of continued anesthetic care resulted in a highly significant difference between the two groups. In the continued anesthetic care model, patients felt it more important to experience continued care. In contrast, patients who were told that another anesthesiologist would take care of them rated the same question with a lower importance ($P < 0.001$).

Conclusion: Before their operations, more than half of the patients felt it very important that they were visited and anesthetized by the same physician. Nevertheless, postoperative patient satisfaction was equally high regardless of whether they were anesthetized by the same physician who had visited them preoperatively.

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1. Introduction

The best way to conduct the preoperative anesthetic visit has been debated for years. Neither the goals of this visit nor how it should be performed are clear, and most proposals to these points lack scientific evidence [1-6]. A recent study

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underlined the importance to patients of the anesthesiologist's training and of who is responsible for the anesthetic care [7]. The purpose of the preoperative visit is to assess the patient's fitness for anesthesia. As the anesthesiologist performing the anesthesia is ultimately responsible for the decision to proceed, traditionally it has been recommended that the anesthesiologist who will be administering the anesthetic should also conduct the preoperative visit (the model of "continued anesthetic care"). Such a procedure with only one anesthesiologist involved is seen as a marker of anesthetic quality [5,6] and is considered to be the preferred scenario by the patient [8]. Longitudinal continuity of care (ie, the patient is seen by the same physician for the entire course of a treatment) is linked to high degrees of patient satisfaction in various fields of medicine [9,10]. In the setting of family practice, nearly 80% of patients from both the United States and the United Kingdom stated that seeing the same physician over time was "important" or "very important" to them, while patients who did not see the same physician over time had the lowest degree of satisfaction [11]. This might be equally true for anesthesia. However, current anesthetic clinical practice can vary [12]. An increasing number of patients are not visited before their operations by the same anesthesiologist who will ultimately administer the anesthesia (ie, the model of "divided anesthetic care") and special practice guidelines were developed for such patient handovers from one physician team to another team [13,14]. The reasons for this interest in handover skills are associated with new regulations about reduced working time for hospital physicians and increased awareness of patient safety issues. Because the best way of communicating to the patient that a different anesthesia team will be administering the anesthesia has not been determined, we hypothesized that when patients are appropriately informed of the scenario of divided anesthetic care during the preoperative visit, their appraisal of the quality of anesthetic care will not be negative [15]. The purpose of the present analysis was therefore to evaluate further the association between continued or divided anesthetic care and reports of patient satisfaction with this care.

2. Patients and methods

This study used data from a larger research project examining the relationship of physician-patient communication with patient satisfaction [16]. The Ethics Committee of the University of Basel approved the research project. Anesthesiologists from our department were trained in groups of 7 to 10 persons. Each group received 10 training sessions in communication skills, one two-hour session per month. Trainees were asked to demonstrate 4 behaviors that have been deemed characteristic for effective clinicians [17] and to adapt them to the preoperative situation: first, establish a welcoming atmosphere for the preoperative visit

Table 1 Characteristics of patients and duration of preoperative visits and operations

	Continued anesthetic care	Divided anesthetic care
Age (y), mean \pm SD	54 \pm 17 (n = 386)	55 \pm 15 (n = 136)
Gender, men/women (%)	199/187 (52%/48%)	66/72 (48%/52%)
Patient's level of education		
Low, n (%)	57 (18%)	21 (18%)
Medium, n (%)	184 (57%)	66 (57%)
High, n (%)	84 (26%)	28 (24%)
Expected duration of surgery (min), means \pm SD	103 \pm 62 (n = 345)	115 \pm 67 (n = 120)
Duration of preoperative visit (min), means \pm SD	22 \pm 10 (n = 386)	23 \pm 11 (n = 137)
Patient felt involved in choice of anesthesia		
Yes, n (%)	189 (63%)	65 (63%)
No, n (%)	111 (37%)	39 (38%)

and agree with the patient on the agenda; second, elicit the patient's concerns about anesthesia and surgery; third, demonstrate empathy both verbally and nonverbally; and fourth, actively involve the patient in making decisions about the planned anesthetic technique whenever possible and conclude the visit by reassuring the patient of the continuity of care within the departments of surgery and anesthesia. Details for the first behavior mentioned above included informing the patient at the very beginning of the conversation as to who would be the responsible anesthesiologist; if it was planned that the anesthesia was to be given by another anesthesiologist, patients were then informed about specific handover procedures from one anesthesiologist to the other, and, at the discretion of the anesthesiologist, the potential advantage of "two anesthesiologists seeing more than one" was also mentioned.

In the present study, patients' feelings and satisfaction were assessed using two different questionnaires: one distributed immediately after the preoperative visit and completed before the operation, and a second questionnaire completed after the operation. Details of the development of the patient satisfaction questionnaire have been described previously [16]. All satisfaction scores were assessed using a 5-point Likert scale (insufficient, fair, appropriate, very good, excellent). To analyze the effect of the communication-training program, doctors were coded as "trained" if they had participated for at least 10 hours in the communication-training program. They were coded as "untrained" if they received no training.

Main outcome variables were the patients' "median satisfaction" and "overall satisfaction." Median satisfaction was calculated based on 10 specific items related to satisfaction [16] if at least 8 of them were answered in the postoperative questionnaire. "Overall satisfaction" was measured

Table 2 Overall postoperative patient satisfaction ratings for anesthetic care

	Continued anesthetic care	Divided anesthetic care
Satisfaction with the preoperative visit (5-point Likert scale)	4.2 ± 0.7 (n = 285)	4.1 ± 0.7 (n = 92)
Satisfaction with the anesthetic procedure (5-point Likert scale)	4.1 ± 0.8 (n = 290)	4.2 ± 0.7 (n = 96)
Experienced side effects as a result of anesthesia		
Yes, n (%)	62 (21%)	21 (22%)
No, n (%)	229 (79%)	75 (78%)

Values are expressed as means ± SD.

as a single item and showed a highly skewed distribution (ceiling effect): less than 1% answered “fair” and no patient answered “insufficient.” Therefore, the lower three categories (insufficient, fair, appropriate) were combined and renamed “standard.” The two main predictor factors were whether the same anesthesiologist was present during the preoperative visit and the operation (“continued anesthetic care”), and whether the anesthesiologist received at least 10 hours of training in communication skills. Five other potential covariates were also evaluated and included patients’ age, gender, level of education, planned duration of surgery, and duration of the preoperative visit. Age, planned duration of surgery, and length of the anesthetic visit were continuous variables; gender and education were categorical with education coded into three categories: primary or secondary school (low), apprenticeship or high school (medium), college or university degree (high). In the first step, the influence of the two dichotomous primary factors “continued anesthetic care (yes/no)” and “10 hours of training for the anesthesiologist (yes/no)” and the combination of both parameters on median and overall satisfaction were analyzed on a bivariate level. In the second step, the additional

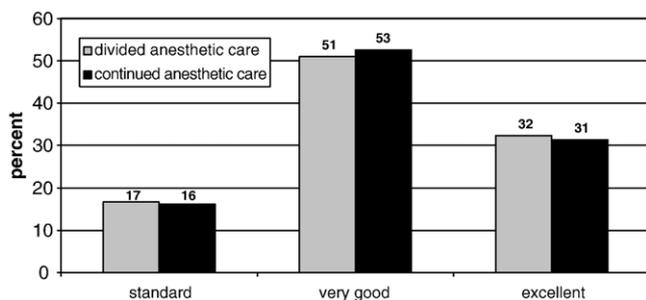


Fig. 1 Patients’ overall postoperative satisfaction ratings with the entire perioperative anesthetic care (continued vs divided anesthetic care model). The satisfaction score was assessed using a 5-point Likert scale (insufficient, fair, appropriate, very good, excellent). The lower three categories (insufficient, fair, appropriate) were combined and renamed “standard” (n = 387, χ^2 test = 0.07, $df = 2$, $P = 0.97$, Cramer’s $V = 0.01$).

covariates were also evaluated on a bivariate level. Finally, a multivariate model containing the two main factors and all covariates was fit to the data. Analysis of variance with one or two factors and a multiple comparison of means were used up to the bivariate level; the multivariate model was built using analysis of covariance. All the analyses were performed using SPSS software (version 11.5, SPSS Inc, Chicago, IL).

3. Results

A total of 654 consecutive patients entered the study; of these, 562 (86%) returned the first questionnaire that was distributed immediately after the preoperative visit. The postoperative questionnaire was returned by 486 patients representing 74% of all patients and 87% of those patients who returned the preoperative questionnaire. The difference in the number of patients in the continued anesthetic care group and divided anesthetic care group represents the clinical practice of our department at the time of the study. However, patients in the two groups were similar in age, gender, education, expected duration of surgery, and length of the preoperative visit. Regardless of whether patients had the same anesthesiologist for their preoperative visit and their operation, patients still felt equally involved in the decision-making process regarding their anesthetic procedure (Table 1). Overall, postoperative patient satisfaction with the anesthetic care was also high with no significant difference between the two groups (Table 2). Whether the same anesthesiologist performed both the preoperative visit and anesthesia or not, 84% and 83% of the patients, respectively, felt that their anesthetic visit was “very good” or “excellent.” However, a slightly higher proportion of patients who had the same anesthesiologist rated their visit as “excellent” (n = 377, χ^2 test = 0.28, $df = 2$, $P = 0.87$, Cramer’s $V = 0.03$). In addition, no differences were observed when patients were asked about their overall satisfaction with the anesthetic procedure that they received or whether or not they experienced side effects resulting from the anesthetic

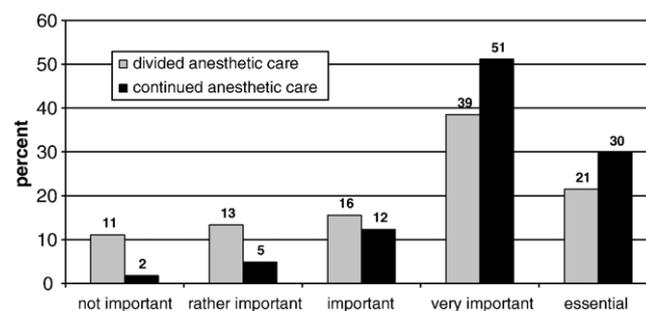


Fig. 2 Patients’ preoperative feelings about the importance of having the same anesthesiologist conduct the preoperative visit and give the anesthesia. Significant differences between the continued versus divided anesthetic care model were observed (n = 524, χ^2 test = 37.5, $df = 4$, $P < 0.001$, Cramer’s $V = 0.27$).

Table 3 Median postoperative patient satisfaction ratings of 10 specific items related to patient satisfaction (multivariate model after adjusting for 5 covariates)

Communication training received	Anesthetic care	Median satisfaction	n
No	Continued	4.0 ± 0.7*	154
	Divided	4.1 ± 0.7	42
Yes	Continued	4.2 ± 0.7*	122
	Divided	4.0 ± 0.8	53

Values are expressed as means ± SD.

* $P = 0.086$ continued anesthetic care, that is, same anesthesiologist performing the preoperative visit and anesthesia without communication training vs receiving at least 10 hours of communication training.

procedure (Table 2). Accordingly, the overall postoperative satisfaction ratings for the entire perioperative anesthetic care were not different between the two groups ($n = 387$, χ^2 test = 0.07, $df = 2$, $P = 0.97$, Cramer's $V = 0.01$) (Fig. 1). However, asking patients before their operations about the importance of continued anesthetic care resulted in a highly significant difference between the two groups (Fig. 2). If the same anesthesiologist who conducted the preoperative visit was also scheduled for the operation, patients felt it more important to experience continued anesthetic care. Patients who were told that another anesthesiologist would take care of them rated the same question with a lower importance ($n = 524$, χ^2 test = 37.5, $df = 4$, $P < 0.001$, Cramer's $V = 0.27$).

Communication training showed no statistically significant effect on median postoperative patient satisfaction scores regardless of whether the same anesthesiologist was present for the preoperative visit and the subsequent anesthesia. After adjusting for the 5 covariates, we observed a trend toward somewhat higher patient satisfaction scores if the same anesthesiologist was present for the preoperative visit and anesthesia and if the anesthesiologist was trained in communication skills (Table 3).

4. Discussion

The results of our study showed that patients' satisfaction with anesthetic care was independent of whether they received "continued anesthetic care" or "divided anesthetic care." The traditional recommendation is that the same anesthesiologist should visit his/her patient before administering anesthesia. Interestingly, this recommendation has never been scientifically tested and seems more to reflect the general belief of the anesthetic community [6]. Although in modern anesthetic practice an increasing number of patients encounter more than one anesthesiologist during their hospital stay [12], the "one patient–one anesthesiologist" rule is still seen as the ideal model and is often vigorously defended [5,8]. Simini [8] personally asked 165 patients during his preoperative visits whether having the same anesthesiologist take care of them would have an influence on their anxiety. Seventy-four percent replied they would be

less anxious if the same physician visited and anesthetized them. Of these, 84% had taken continued anesthetic care for granted and were disappointed if a second anesthesiologist was involved. He concluded that the rule "one patient–one anesthesiologist" should be followed because of the beneficial effect it has on the patient's preoperative anxiety. One would expect that a disappointed patient would be less satisfied. Although Simini did not measure his patients' actual satisfaction after the operation, our data do not support such a conclusion.

There is no doubt that factors such as economic pressures resulting in a shortage of beds, shorter hospital stays, establishment of pre-assessment clinics, legal regulations of working hours, social changes with growing part-time employment, and job sharing have changed, and will continue to change, anesthetic practice [18,19]. Even today, there are increasing numbers of patients who do not meet their anesthesiologist until the operating room. Thus, it is important to know how we can achieve high patient satisfaction in this changing environment. Heidegger et al [20] developed a psychometric questionnaire to assess patients' satisfaction with anesthetic care. Information and involvement in the decision-making process was by far the most important dimension to influence patients' satisfaction, whereas the dimension "continuity of anesthesiologist" showed less influence on total satisfaction scores. This is in agreement with the findings of our own investigation and with those of earlier studies [21,22].

Adequate decision making on the part of the patient relies on useful information given by the anesthesiologist and a trusting physician-patient relationship. In our previous work, we reported that certain communication behaviors of anesthesiologists such as using facilitators, open questions, and affective statements, correlate with patient involvement in the preoperative interview [23]. Although a model of anesthetic care delivery without longitudinal continuity does not per se preclude anesthesiologists from performing these communication tasks, it might make it more difficult. Our communication program was therefore tailored to the particular situation of the anesthesiologist and patient in the preoperative setting [16]. In particular, anesthesiologists were taught to explain to the patient at the very beginning of the preoperative visit whether he or she would be seeing the same anesthesiologist the next day, and, if not, anesthesiologists had to explain the reasons and the measures taken to assure that all information from their conversation would be given to the anesthesiologist responsible during surgery. The information transferred between the different teams included a signed consent form by the patient for the proposed anesthetic procedure as well as a structured, computerized, preoperative evaluation form that was completed by the anesthesiologist during the preoperative visit. Such hand-over procedures assure that no information is lost and help to maintain the quality of the fragile physician-patient relationship [14]. Even when a patient initially expects to

have the same anesthesiologist in the operating room, an early, honest, and objective explanation of the real situation, which might differ from the patient's expectations, allows the patient to better cope with the model of divided anesthetic care. One of the coping strategies could be a shift in the patient's appraisal of the importance of being cared for by a single anesthesiologist. If the same anesthesiologist was planned for the operation, 81% of our patients felt it "very important" or "essential" to be anesthetized by the same physician. This contrasts with patients who were told that another anesthesiologist would take care of them. In this situation, only 60% of patients rated the same question as "very important" or "essential" (Fig. 2). Although this rating is significantly lower, it still leaves a substantial proportion of patients who felt it "very important" or even "essential" to be anesthetized by the same physician. It is unclear why these patients were nevertheless still satisfied with the anesthetic care when they encountered division of this care and thus experienced disappointment. In this context, a few limitations of our study should be taken into account. First, measuring patient satisfaction in general and with anesthetic care in particular is very complex and difficult. A variety of instruments have been developed over the past 30 years to measure different aspects of patient satisfaction [10,20,24-26]. Although methodology varies considerably, high satisfaction ratings are observed with medical care [25,27], and it is considered that overall satisfaction ratings are of limited value as an evaluation tool for the physician-patient relationship [28]. Second, our training program was not specifically tailored toward a better acceptance of a divided anesthetic care model. To tell the patient at the very beginning of the preoperative visit that he or she will encounter another anesthesiologist was only one aspect of the communication skills training. Third, talking with patients about divided anesthetic care itself could have evoked anxiety in some patients not previously aware of this practice. This increased awareness could then have led to two different reactions: (1) uncertainty, disappointment, and mistrust, leading to negative emotions; or (2) acceptance of positive effects such as "4 eyes see more than two," leading to positive emotions. By measuring patient satisfaction only, we can neither distinguish between these contradictory reactions nor can we quantify them. And, finally, the two groups of continued and divided anesthetic care were not stratified according to type of surgery, ASA physical status scoring system, degree of monitoring, or anesthetic technique, all of which could influence patients' satisfaction ratings and acceptability of the respective anesthetic care model.

In conclusion, receiving continued or divided anesthetic care did not influence postoperative patient satisfaction with anesthesia. The divided anesthetic care model already exists in many institutions around the world. Further investigation should therefore address how to improve upon this practice and how to communicate it to the patients.

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