

Effects of Video Information on Parental Preoperative Anxiety Level and Their Perception of Conscious Sedation vs. General Anesthesia for the Dental Treatment of Their Young Child

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Aim. To investigate the impact of video information on parental preoperative anxiety and perception and their preference of conscious sedation versus general anesthesia for the dental treatment of young patients.

Method/materials. Parents were given a verbal explanation regarding the two treatment options and were then asked to fill out a prescreening questionnaire. Their preference for mode of treatment was obtained and their preoperative anxiety level was measured on a visual analog scale (VAS). A video film depicting two children under going dental treatment with conscious sedation (CS) and a third child undergoing general anesthesia (GA) for dental treatment was shown to the parent. Following the viewing of the video film a post-screening questionnaire was given. Parents' post screening anxiety was measured and they were asked if their perception and preference of the two modes of treatment remained the same or changed.

Results. 40 parents were included and completed the trial. The prescreening anxiety level of parents was 2.79 (± 1.05 , SD) and was not significantly different than the post screening anxiety level of 2.91 ($\pm .99$ SD, paired *t*-test $p=0.432$). The majority of parents preferred CS to GA for the treatment of their child prior to screening of the video. Among the few who chose GA ($n=5$) all but one changed their choice after viewing the video to CS. However, this difference was not found to be statistically significant due to the small number of subjects in this group (McNemar test, $p = 0.125$). Most parents voiced the opinion that the video film contributed to their knowledge and also considered GA as having more risks than CS. An interesting finding was that a statistically significant difference was found regarding parent's perception of the two procedures and what they actually saw in the video. The majority of parents stated that their initial perception of GA was not similar to their viewing experience, conversely, CS matched their expectations.

Conclusion. Parents' anxiety regarding their child's dental treatment under GA or CS is not affected by the viewing of a video film depicting either method. Parent's perception of GA is different than the actual procedure and may affect their choice of treatment.

Key words: General anesthesia, conscious sedation, children, dental treatment, anxiety

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INTRODUCTION

The delivery of information to parents of a pediatric patient before a medical or surgical procedure has two goals: to provide a mechanism by which parents can participate in treatment decisions with full understanding of the factors relevant to their child's proposed care and to reduce situational anxiety. Increasingly, the acceptability of behavior management techniques is being held to the reasonable parent's standard and not to adherence of the professional community standards for determining acceptable behavior management practices.¹

The decision to use a general anesthetic (GA) or conscious seda-

tion (CS) with medical stabilization (papoose board) is often subject to parent bias regarding its safety and patient comfort. For example, dental phobic parents may be so affected by their dental anxiety that they are unable to comprehend the advantages of CS and choose GA for their young child in need of dental treatment without fully understanding the GA procedure and what it entails to their child. Few parents have actually observed a child undergoing GA.

A study designed to determine whether parents of children attending the outpatient general anesthesia session at a hospital fully understand the proposed treatment showed that 40% of the written consent obtained was not valid. While the parents' understanding appeared to improve on the actual day of treatment, 19% still did not know exactly what was going to happen to their children just before the treatment was to be carried out. Many of the subjects had no knowledge of the type of anesthesia that would be used for their children but were more aware of the number and type of teeth that were going to be extracted.²

In the past, adherence to the professional community standards for determining acceptable behavior management was sufficient. However, as mentioned above, the acceptability of behavior management practices is increasingly being held to the reasonable parent standard. This standard requires that the dentist discusses with

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the parent all the information relevant to a decision to consent or not.³ Traditionally, informed consent was obtained following one of two methods of information delivery: written and oral presentation.

This study will examine a more modern approach to information that present to the parent a videotaped depiction of two young dental patients undergoing dental treatment under CS and GA. The purpose of this study is to investigate the impact of video information on parental preoperative anxiety, perception and preference of CS versus GA for the dental treatment of young patients.

METHODS

Subjects

All parents appearing at a private dental clinic with their young uncooperative child were asked to participate in the survey and view a video film. Subjects were excluded if a sibling of their child had already experienced either method, if they voiced strong hesitation to view the videotape, if they presented with a strong bias preferring one method to the other, or if their child had any major medical or mental impairment.

Parents were given a brief verbal explanation by the investigator regarding the use of CS coupled with the papoose board (PB) or active restraint by a parent and treatment under GA. Parents were asked which of the two methods they preferred for the dental treatment of their child. Parents were asked regarding their anxiety to the future dental treatment of their child using a visual analog scale (VAS). Parents were then shown a video film depicting two children undergoing dental treatment with conscious sedation with passive medical stabilization and a third child undergoing GA for dental treatment.

The video film depicting two children undergoing dental treatment with conscious sedation represented a sedation with an overall evaluation as being "very good" using the Houpt scale⁴ for overall success of sedation (table 1) and the other was rated as being "fair": the child crying intermittently and treatment being difficult. Both children were seen in a PB with head restraint and nitrous oxide nasal mask. Rubber dam was used as well as local anesthesia. The third child, who was treated with GA, was seen in the operating room undergoing intravenous catheterization, nasal intubation, dental treatment and extubation. All three children were under five years of age.

Following the viewing of the video film, a post-screening survey regarding parents' attitudes to the treatment modalities was given. Parents were asked if the video film reflected their perception of the two techniques. The parents were asked if the film contributed to their knowledge and whether seeing the film was beneficial for their decision process. Their post screening anxiety was again measured using a VAS. Parents filled out the printed survey anonymously.

STATISTICAL ANALYSIS

For the paired comparison of two means, a paired t-test was used. A McNemar test was used to compare paired group proportions. A p value < 0.05 was considered significant.

RESULTS

Forty parents were included and completed the trial. The sample characteristics of subjects are presented in Table 2. The prescreening anxiety level of the parents was 2.79 ± 1.05 (mean \pm SD) and was not significantly different than the post screening anxiety level of $2.91 \pm$

0.99 (paired t-test, $p=0.432$). The majority of parents preferred CS to GA for the treatment of their child prior to screening of the video (Table 3). Among the few who chose GA ($n=5$) all but one changed their choice after viewing the video to CS. However, this difference was not found to be statistically significant due to the small number of subjects in this group (McNemar test, $p=0.125$). Parents' responses to the questionnaire are presented Table 4. Most parents voiced the opinion that the video film contributed to their knowledge and also considered GA as having more risks than CS. An interesting finding was that a statistically significant difference was found regarding parent's perception of the two procedures and what they actually saw in the video. The majority of parents stated that their initial perception of GA was not similar to their viewing experience; conversely, CS matched their expectations (McNemar test, $p<0.001$).

DISCUSSION

Providing information before a medical or surgical procedure has been proven to reduce anxiety in such situations as colonoscopy⁵, heart catheterization^{6,7} radiation therapy and bone scan imaging.⁸ A recent study⁹ examining the use of video information for obtaining informed consent prior to an invasive procedure in rheumatology concluded that video information decreases preoperative anxiety in all participating patients.

It has been suggested that informed consent videotapes and Digital Versatile Disks (DVD) should be considered as effective methods in giving standardized information for anesthetic procedures.² The use of such audio-visual aids may complement verbal informed consent that can be of variable quality. However, the ideal medium for the provision of preoperative information is unclear. Traditionally, this information has been provided verbally by the clinician as a component of informed consent.¹⁰

Studies have investigated the use of leaflets to improve and standardize the information received by patients.^{11,12} These studies have shown mixed results.¹⁰ Many patients do not read such forms, and many of those who do, do not fully understand the information provided. Electronic media such as videotape and DVD have the potential to overcome these deficiencies of information leaflets. Even so, the doctor-patient interaction must remain at the core of the information process¹⁰, however, varying communication abilities on the part of the doctor may lead to the patient having an inadequate understanding of the proposed procedure; the use of video and DVD may complement the consent process.¹³

Traditionally, there has been a belief that the provision of extra information, particularly about risks and complications, may cause patients undue anxiety. This may be even more relevant regarding the consenting parent for the treatment of their young child. The pediatric dentist faces an ongoing dilemma regarding the amount of information, which needs to be conveyed to the parent in order to obtain informed consent for the type of patient management techniques to be employed for the dental treatment of a young child.

A study² showed that parents were more likely to understand the nature of the dental treatment than the type of anesthesia to be used on their child. They did not appear too concerned about the type of anesthesia because they did not perceive it as a potential hazard to their children, which in reality could have much more risks attached.¹⁴ On the other hand, too much information may cause unnecessary stress and anxiety to the parent during the decision

making process. A study¹⁵ examining parental anxiety during the induction of their child into general anesthesia concluded that parental presence during induction of anesthesia was associated with parental physiologic and behavioral manifestations of stress.

The results of the current investigation may shed some light on these issues. The majority of the parents stated that their perception of GA was not reflected as much as in the video shown. Parents were not aware of the induction procedure and the degree of invasiveness and may have assumed that their child would tolerate GA better than CS based on this misconception. Indeed, the majority of those who initially preferred GA for their child changed their preference to CS after viewing the GA procedure. This finding was not found to be statistically significant due to the small amount of parents in this group. This limitation of the study could be addressed in a future one which would include more parents who prefer GA. Another limitation included the fact that parents who objected to viewing the videos were excluded from the study. Perhaps the use of such informational films is not suitable for all. A few parents who agreed to view the videos experienced some emotional distress while watching and voiced the opinion that they may opt not to do any treatment.

Further research is necessary to determine the optimal method to inform parents about behavior management techniques and gain their consent.

Table 1. Houpt⁴ rating scale for overall evaluation of sedation.

Aborted	No treatment
Poor	Treatment interrupted, only partial treatment completed
Fair	Treatment interrupted but eventually all completed
Good	Some limited crying or movement, e.g. during anesthesia or mouth prop insertion
Very good	Some limited crying or movement, e.g. during anesthesia or mouth prop insertion
Excellent	No crying or movement

Table 2. Sample characteristics

Gender		Male	Female
n = 40	Parent	14	26
	Child	21	19
Age (months) of child		44.8 ± 11.5 (mean ± SD)	

Table 3. Effect of video on parent anxiety and preference of treatment (n=40)

	Before		After		Significance
	GA	CS	GA	CS	
Anxiety level (mean ± SD)	2.79 ± 1.05		2.91 ± 0.99		p = 0.432*
Preference	GA	CS	GA	CS	p = 0.125**
	5	35	1	39	

* Paired t-test **McNemar test

Table 4. Parental responses to post-screening questionnaire (n=40)

	yes	no
Did video contribute to your knowledge?	36	4
Does GA involve more risk?	37	3
Did video reflect your prior perception and knowledge of GA?	20	20
Did video reflect your prior perception and knowledge of CS?	36	4
Significance	p<0.001*	

*McNemar test

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