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Research Article

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Parental Satisfaction in the Operating Room

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Abstract

Background: *Since 2017, parental presence during anesthetic induction and recovery has been a legal right in Portuguese legislation. Nevertheless, this practice remains controversial. Our study aimed to evaluate parental satisfaction with their experiences in the Operating Room (OR).*

Methods: *We conducted an audit between February and March 2021, to assess parental presence, overall satisfaction and perioperative experiences of parents and children in the OR.*

Results: *One hundred and seventeen parents and children were included. Around eighty percent of parents were present during the anesthetic induction; 97.8% expressed satisfaction with their presence and 98.9% acknowledged the benefits for their children. Among parents who were absent during induction, 70.8% expressed a desire to be present in a future procedure. Parents also emphasized the importance of professionalism and effective communication within the medical team. No significant relationship was observed between overall satisfaction levels and presence during anesthetic induction. When comparing groups with and without parents present during anesthetic induction, no significant differences were observed in children's experiences during perioperative care.*

Discussion: *Our audit reveals that the majority of parents who attended anesthetic induction were satisfied with this opportunity: they believed it contributed to decrease their child's anxiety and distress, consequently reducing their own anxiety. Interestingly, a significant number of parents who were not present expressed a desire to be present in the future. According to national legislation, parental presence during induction should always be discussed between the medical team and parents.*

1. Introduction

The inclusion of parents or legally appointed representatives in the operating room (OR) during the anesthetic induction for pediatric surgery is a subject of debate and still lacks consensus. Anesthetic induction represents a highly anxiety-inducing moment for both pediatric patients and their family members [1]. Preoperative anxiety is a significant factor known to have a detrimental impact on the surgical and anesthetic experience, and it also constitutes an additional risk factor for postoperative complications in pediatric patients [2].

Studies have shown that providing preoperative emotional support can reduce anxiety and distress in both patients and families, enhance collaboration with healthcare teams, and prevent postoperative behavioral issues [3]. The allowance of a parent or legally appointed representative to be present in the OR during the induction of anesthesia and the subsequent recovery phase can be considered a positive step towards humanizing healthcare services [4]. Nevertheless, concerns regarding the unpredictability of parental behavior, increased demands on the medical team, and prolonged induction times for anesthesia remain key considerations with regard to consider parental presence in the OR [5].

In Portugal, legislation enacted since 2017 has mandated that appropriate conditions must be established for the presence of children's biological parents or legally appointed representatives

during the anesthetic induction and surgical recovery for individuals under the age of 18. Any factors that may discourage or obstruct the exercise of this right must be communicated in advance, and healthcare institutions are responsible for ensuring the fulfilment of these conditions [4].

To gain insights into the international landscape concerning this issue, we examined practices in English, French, and American healthcare systems. We found that none of these countries have standardized regulations governing the presence of biological parents ou legal representantatives during anesthetic induction in the OR [6-8]. Notably, both the Société Française d'Anesthésie et de Réanimation and the Royal College of Anesthetists advocate for the presence of those during induction when feasible [8,9]. Consequently, individual hospitals establish their policies on this matter, either allowing or restricting the presence during induction, with this information frequently available on the respective hospital's website.

This study aimed to audit the contentious topic of parental presence during pediatric surgical anesthetic induction in the OR. It seeked to understand the impact of preoperative anxiety on both pediatric patients and their families and to assess the potential benefits of providing preoperative emotional support, thereby reducing anxiety and enhancing collaboration with healthcare teams.

2. Methods

In this article, the meaning of parents is interchangeable between biological parents and legal representatives.

This survey was part of a clinical audit designed to improve the quality of care delivered in pediatric perioperative care. It received prior authorization from the Quality, Risk, Hygiene, Health, and Safety Department from our University Hospital as well as from the Hospital Board (registry number 104/2020 from 29-12-2020). The study encompassed all consecutive children who underwent non-urgent surgical procedures during the period from February 22 to March 9, 2021. A telephone survey one week after the anesthetic procedure was conducted with parents who accompanied their children during the surgical interventions.

Demographic data were collected from the electronic clinical records, ensuring patient anonymity. The collected data encompassed parameters such as sex, age, American Society of Anesthesiologists (ASA) physical status, comorbidities, surgical specialty, type of surgery, surgery duration, anesthesia duration, type of anesthesia, complications and surgical regimen (outpatient/ inpatient). The exclusion criteria were the inability to reach a telephone call or the parents' refusal to respond.

The telephone survey, after parental consent to participate, included quantitative queries regarding general satisfaction, employing a Likert scale ranging from 1 to 10, and qualitative questions addressing the presence or absence of parents during anesthetic induction (Table 1).

<table>
<tr><td rowspan="8">Quantitative questions</td><td>Global experience</td></tr>
<tr><td>Admission process and surgical preparation</td></tr>
<tr><td>Communication with surgeons</td></tr>
<tr><td>Communication with anesthesiologists</td></tr>
<tr><td>Communication with nurses and other operating room staff</td></tr>
<tr><td>Attention given by the team to your concerns (eg uncontrolled post-operative pain and surgery time)</td></tr>
<tr><td>Ability of the team to minimize pain, fear and discomfort associated with the treatment</td></tr>
<tr><td>Emotional support provided by the team</td></tr>
<tr><td>Efficiency and relevance of the treatment</td></tr>
<tr><td colspan="2">Qualitative questions</td></tr>
<tr><td colspan="2">Have you been given the opportunity to go to the operating room when the anesthesiologist put your child to sleep? (eg: anesthetic induction)</td></tr>
<tr><td colspan="2">Were you present when the anesthesiologist put your child to sleep (when he was anesthetized)?</td></tr>
<tr><td>If yes</td><td>If no</td></tr>
<tr><td>Did the anesthetist put your child to sleep with a mask or through an intravenous line (medication through a vein)?</td><td>Would you like to have been present at that moment (“fall sleep”)?</td></tr>
<tr><td>Could you say more about the experience?</td><td>Why wasn't there?</td></tr>
</table>

How was your overall experience? (0-10)	How did you feel about that moment?
How did you feel about that moment ("the moment the anesthesiologist put your child to sleep")?	Are you glad you weren't there?
Are you pleased to be there? If yes,why?	If your child were to undergo another surgical procedure, would you like to be present at that time?
What did you like least about being present at that moment? Why?	Has your child had any complications with the anesthesia of which you were notified?
Has your child had any complications with anesthesia?	
Do you think that your child benefited from your presence at that time when falling asleep?	
If your child were to undergo another surgical procedure, would you like to be present again? Would you recommend it to a friend?	
What did you like least about your and your child's experience in the operating room?	
What did you like most about your and your child's experience in the operating room?	
What do you think that scared you child most about this experience in the operating room?	
What do you think your child enjoyed most about this experience?	
Is there any more information you would like us to know about your experience?	
Do you have any suggestions for improving the experience of parents and children in the operating room?	

Table 1: Survey Conducted with Parents of Children Undergoing Surgery

To analyze the acquired data, a descriptive analysis was undertaken using SPSS (version 27.0) and Excel (Office365) software. Mann-Whitney-U and Kruskal-Wallis tests were employed to explore the correlation between overall parental experiences and factors related to the child, surgery, and their involvement in the anesthetic induction. A significance level of $p<0.05$ was considered.

3. Results

Among a total of 144 patients who met the inclusion criteria, 25 were excluded due to unsuccessful phone contacts and two dues to unavailability to respond, resulting in the analysis of a total of 117 questionnaires. Demographic data of children whose parents responded to the survey are detailed in Table 2.

Sex	Feminine: n=44 (37,6%)	Masculine: n=73 (72,4%)
Age	Average (sd) (min; max)	7,7 (5,4) (0,17; 18)
ASA-PS	ASA-PS I: n=71 (61,5%)	
	ASA-PS II: n=39 (33,3%)	
	ASA-PS III: n=5 (4,3%)	
	ASA-PS IV: n=1 (0,9%)	
Surgical speciality	Pediatric surgery: n=50 (42,7%)	
	Otolaryngology: n=22 (18,8%)	
	Orthopedics: n=19 (16,2%)	
	Stomatology: n=10 (8,5%)	
	Urology: n=7 (6,0%)	
	Plastic surgery: n=6 (5,1%)	
	Others (neurosurgery, ophthalmology): n=3 (2,7%)	

Type of anesthesia	Balanced general anesthesia: n=68 (58,1%)	
	General inhalation anesthesia: n=21 (19,9%)	
	Intravenous general anesthesia: n=6 (5,1%)	
	Combined anesthesia: n=14 (12,0%)	
	Sedation/Monitored Anesthetic Care: n=7 (6,0%)	
	Peripheral nerve block: n=1 (0,9%)	
Duration of surgery (minuts)	Mean (SD) (min; max)	47,7 (44,4) (1;259)
Duration of anesthesia (minuts)	Mean (SD) (min; max)	70,8 (55,3) (9;366)
Surgical regimen	Inpatient: n=44 (37,6%)	
	Outpatient: n=63 (53,8%)	
	Outpatient overnight: n=10 (8,5%)	

Table 2: Demographic Data

Most parents rated the entire admission process, communication with the medical team and nurses, emotional support and team efficiency with the highest score (10/10) with no significant differences between the group of parents who attended the induction and those who did not.

Regarding attendance during the anesthetic induction, 79.5% (n=93) of parents were present. The age group that most often had the presence of parents was the 2-6 years old group (37.6%). Of the total of parents present at the anesthetic induction, 97.8% expressed satisfaction with their presence and 98.9% acknowledged the benefits for their child. Regarding parents absent during the induction (n=24), 54.2% reported preferring to be absent, however 70.8% expressed a desire to be present in a future procedure.

No significant relationship was identified between the overall satisfaction levels of parents who were present or absent during the anesthetic induction and various factors including the anatomical site of surgery, the specific surgery location, the timing of surgery or anesthesia, the age group, or the child's gender. Nonetheless, a notable correlation emerged between parents who desired to be present during the anesthetic induction and their overall satisfaction levels: those parents who didn't want to be present expressed a poorer overall experience (p=0.014).

Regarding open-ended questions, parents were categorized into three groups: parents present during the anesthetic induction (group 1); parents absent during the anesthetic induction due to some impossibility or shared decision between the parents and medical team (group 2); and parents who individually chose not to be present during the anesthetic induction. (group 3).

In group 1 (n=93), the majority reported positive experiences while being present, emphasizing their concern and effective communication with the medical team. A smaller subset (n=6, 6,5%) described the experience as "traumatic, painful, and distressing," while another group (n=7, 7,5%) found it "difficult to watch," yet acknowledged the importance of their presence for the child. Concerning the induction moment, most parents (n=60, 64.5%) expressed feeling "concerned," "anxious," or "powerless during the situation". In contrast, 31 parents (33.3%) felt "calm," "quiet," and "safe," attributing it to effective communication with the medical team and the familiarity of the surgery as stabilizing factors. When asked specifically if they liked being present during the anesthetic induction, the majority (n=91, 97.8%) answered "Yes," citing their ability to accompany and comfort their children as the primary reasons.

Concerning the questions addressed to group 2 (n=18), 13 parents (72.2%) reported non-attendance due to not being given the opportunity. The remaining 5 parents (27.8%) were absent due to the child's unwillingness or other circumstantial reasons. Half of the parents from this group reported feeling anxious at the time of the anesthetic induction (with a mean child's age of 6.7), while the remainder felt calm and comfortable (with a mean child's age of 14.6).

In group 3 (n=6), half of the parents expressed confidence and comfort in not attending the induction. However, 2 parents (33.3%) did not attend due to anxiety. Regarding the feelings expressed by the parents, only 2 (33.3%) from this group were comfortable with the anesthetic induction, while the remaining 4 (66.6%) expressed worry and fear.

Regarding the queries directed at all groups, when asked about the least appreciated aspects of the OR experience, the majority of parents in group 1 did not indicate any negative aspect (n=67, 72.0%). Additionally, a few expressed concerns about surgery delays (n=4, 4,3%), and issues during the postoperative period, such as pain or inadequate attention (n=4, 4,3%). Some mentioned distressing moments, like witnessing their child losing consciousness (n=3, 3,2%), feelings of abandonment (n=2, 2,2%) and agitation (n=2, 2,2%). In group 2, the majority (77.8%) reported no specific issues. Regarding parents in group 3, only one parent expressed dissatisfaction concerning surgery delays.

When asked about the most appreciated aspects in this experience, parents in group 1 highlighted the attention, compassion and care

exhibited by the healthcare professionals they interacted with (n=36, 38,7%). Some emphasised the value of being present during induction and recovery (n=15, 16,2%). In group 2, all parents (n=18) emphasised the support and attention provided to both themselves and their children, along with the clear and prompt communication of information. In group 3, the majority (n=5, 83,3%) reported empathy, attention, and good follow-up.

Concerning the most frequently reported fears expressed by children who were able to communicate their feelings verbally, in group 1 the most common response was an absence of fear (n=34, 36,6%), followed by fear of the surgery itself (n=14, 15,1%) and fear of the medical team (n=13, 14%). Other sources of fear included the moment of anesthetic induction (n=9, 9,7%) and the placement of catheters or direct contact with needles (n=6, 6,5%). In group 2, most parents replied that their children weren't afraid of anything (n=10, 55,6%). Two parents mentioned their children were fearful of post-surgery deterioration and another two expressed fears of not waking up after the procedure. The OR environment and the medical team also caused fear in a few cases (n=2, 11,1%), as well as concerns about inadequate post-procedure follow-up (n=1, 5,5%). In group 3, the majority reported that their children were not afraid, although two parents mentioned a fear of doctors and the surgical process itself.

Finally, when asked for suggestions to enhance the experience in the operating room, in group 1, the prevalent response was that there were no suggestions for improvement (n=71, 76.3%). Some parents mentioned the importance of enhancing communication between the medical team and parents (n=6, 6.5%). The proposed changes were related to hospital logistics. Fifteen out of the 18 parents in group 2 (83.3%) had no specific points to mention, while another 2 (11,1%) reiterated that their presence in the operating room would have been crucial. Two parents in group 3 highlighted issues outside the operating room.

Qualitative questions	
Regarding the perioperative treatment of child	
	Median (min-max)
Global experience	10 (7-10)
Admission process and surgical preparation	10 (6-10)
Communication with surgeons	10 (4-10)
Communication with anesthesiologists	10 (7-10)
Communication with nurses and other operating room staff	10 (7-10)
Attention given by the team to your concerns (eg uncontrolled post-operative pain and surgery time)	10 (6-10)
Ability of the team to minimize pain, fear and discomfort associated with the treatment	10 (2-10)
Emotional support provided by the team	10 (5-10)
Efficiency and relevance of the treatment	10 (4-10)
About your presence in the OR	
Were you present during the anesthetic induction?	Yes n=93 (79,5%) No n=24 (20,5%)
If yes	**If no**
Type of induction? n=93	Would you like to be present? n=24
Inhalation: n=54 (58,5%) Intravenous n=39 (41,5%)	Yes n=11 (45,8%) No n=13 (54,2%)
Did you like to be present? n=93	Why were you not present? n=24
Yes n=91 (97,8%) No n=2 (2,2%)	Team decision n=10 (41,7%) Parents decision n=6 (25%) Shared decision n=6 (25%) Child decision n=2 (8,3%)
Do you think the child benefited from your presence? n=93	In the next opportunity, would you like to be present? n=24
Yes n=92 (98,9%) No n=1 (1,1%)	Yes n=17 (70,8%) No n=7 (29,2%)

Would you like to be present again? n=93
Yes n=91 (97,8%) No n=2 (2,2%)
Global experience
Median 10 (min 1; max 10)

Table 3: Answers to the Satisfaction Questionnaire

4. Discussion

4.1. Parents in the OR - YES

When assessing the perspective of parents during the anesthetic induction, certain aspects supporting their presence in the operating room (OR) stand out. The majority of parents present during induction expressed gratitude for being there. While some found it a challenging moment, they emphasised how crucial their presence was in reassuring their children. Moreover, they reported feeling calm and secure, expressing a desire to be present for future surgeries.

Regarding the least appreciated aspect, most parents in group 1 had no specific issues to note regarding their experience during their children anesthetic induction. Regarding the most appreciated aspect, they highlighted the care and communication of the medical team, as well as the support provided to both parents and children.

In terms of the least appreciated aspects experienced by children or young people, some children expressed fear at not being accompanied by their parents during the anesthetic induction and highlighted the positive aspect of having their parents present both during induction and recovery.

In summary, most parents present during the anesthetic induction felt satisfied with the opportunity, claiming it helped to reduce the child's anxiety and their own distress about the surgery. Moreover, a significant percentage (45.6%) of parents who were not present expressed a desire for this option to be available. Thus, we believe that the presence of parents in the OR is beneficial for both children and the attending parents, representing a step towards improving and humanizing healthcare.

4.2. Parents in the OR - NO

Comparing parents in group 1 with those in group 2, we observed a higher prevalence of negative feelings, such as worry, anxiety and distress, among parents who were present during the anesthetic induction. Evaluating these two groups concerning communication by the medical team, we noted more complaints about lack of communication in group 1. In groups 2 and 3, parents highlighted the support and attention received from the medical team, as well as the clarity and swiftness of information transmission.

Therefore, choosing not to be present during the induction does not seem to impact the quality of information transmission or the type/quality of emotional support provided to parents and their children. It's essential to note that some parents in group 1 reported experiencing strong emotions, potentially requiring additional attention from the medical team, adding stress and anxiety, potentially harmful to the child. Despite no complications occurring during anesthetic induction in our sample, it's important to acknowledge the possibility and the potential traumatic impact on parents. The absence of parents in the OR serves to prevent these situations.

Analyzing the evaluation of the children's greatest fear, when comparing groups 1 and 2, we noted a similar experience. The absence of parents doesn't seem to increase the children's unease in the OR. Additionally, both parents in group 2 and group 3 mentioned fewer aspects they didn't appreciate in the process, highlighting a reduced perception of the child's feelings of abandonment and agitation.

In terms of aspects valued by the children, these were quite similar in both groups, suggesting that parental presence is not a highlighted aspect of choice for most children. Therefore, it doesn't appear to be something desired by the children or significantly contributing to an improved quality of the OR experience.

5. Conclusion

It is known that the overall experience of the anesthetic-surgical moment can significantly influence possible future surgical interventions [10]. Therefore, it is important to make efforts to provide the best possible experience for children, avoiding sources that may contribute to the development of fears and the generation of anxiety, both in the current surgery and in future situations.

The presence of parents during the anesthetic induction can be a factor that contributes to the discomfort of the medical team, leading to logistical situations that may delay operating room times. Moreover, in certain situations, it may even impair the team's performance, as is the case with critically ill children or those with difficult airways.

However, it is appreciated by parents and children, representing an important step in the humanization of care in the operating room, and should always be considered unless for forceful reasons that prevent it.

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