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Parental presence at induction of anesthesia: perceptions of a pediatric surgical department before and after program implementation☆

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ABSTRACT

Introduction: Parental presence at induction of general anesthesia (PPI) is highly desired by children and parents. However, it often faces resistance from medical personnel. We conducted a survey evaluating the perceptions of surgeons before and after establishment of a PPI program.
Methods: Internal web-based surveys using Likert Scale questions were administered to all members of a pediatric surgical department before and after the introduction of PPI at a freestanding children's hospital. Pre and post results were compared by Wilcoxon rank-sum tests. A p-value ≤0.0026 was considered significant due to the Bonferroni correction.
Results: The survey was sent to 59 surgeons 1 year before and 5 years after gradual implementation of PPI. Response rates were 46% and 54%, pre and post implementation, respectively. After implementation, there was a statistically significant increased level of agreement with the statement: "PPI improves the parents' level of satisfaction" ($p = 0.0025$) and a statistically significant decreased level of agreement with the statement "PPI lengthens the duration of induction" ($p = 0.0001$). Before initiation, 56% wanted to see PPI implemented, while after implementation, 97% wanted PPI to remain.
Conclusions: A majority of pediatric surgeons favored maintaining PPI after implementation. Resistance to initiation of PPI should not hinder implementation.
Type of study: Survey
Level of evidence: Not applicable

The concept of patient- and family-centered care has garnered increasing importance in pediatric surgery in recent years, as evidenced by the first book chapter dedicated solely to the subject in the 7th edition of "Pediatric Surgery" [1]. The surgical experience is often a stressful event for the child and their family. All personnel who work in a pediatric operating room can attest to the emotional intensity of separating a child from their parents, in order to proceed with anesthetic induction and surgical intervention. Though preoperative sedation is sometimes used to reduce anxiety and improve cooperation, non-pharmacological methods are increasing in popularity. These non-pharmacological methods, detailed in a recent Cochrane Review by Manyande et al., include parental presence at induction (PPI), passive child intervention (playing a video), mask introduction, interactive child intervention (interactive computer games), and parental acupuncture [2]. Physiologic evidence to support the effectiveness of PPI in reducing child and parental anxiety has not emerged. The Cochrane Review concluded that PPI did not reduce child anxiety compared with not having a parent present [2]. However, literature has shown that parental temperament can affect a child's anxiety during induction [3,4]. Moreover, parents have shown an overwhelming desire to be present during induction, and parental anxiety has been found to be significantly reduced when they are present at induction [1,2,5–8]. Therefore, the issue is one that is best seen outside the typical lens of evidence-based care. It is one of parental satisfaction, trust, and shared decision making. Many parents want to be with their children during their most vulnerable moments, and are increasingly viewing this desire as a right [1].

The views of health professionals regarding parent presence have often differed from that of parents [1,2,9]. In a survey study by Paice et al., operating theater personnel and surgeons were found to be significantly less supportive of parent presence during invasive procedures than parents [9]. To date, no studies have demonstrated that PPI or other situations of parental presence are associated with adverse events to either the child or the parent [1]. Therefore, the resistance to PPI is

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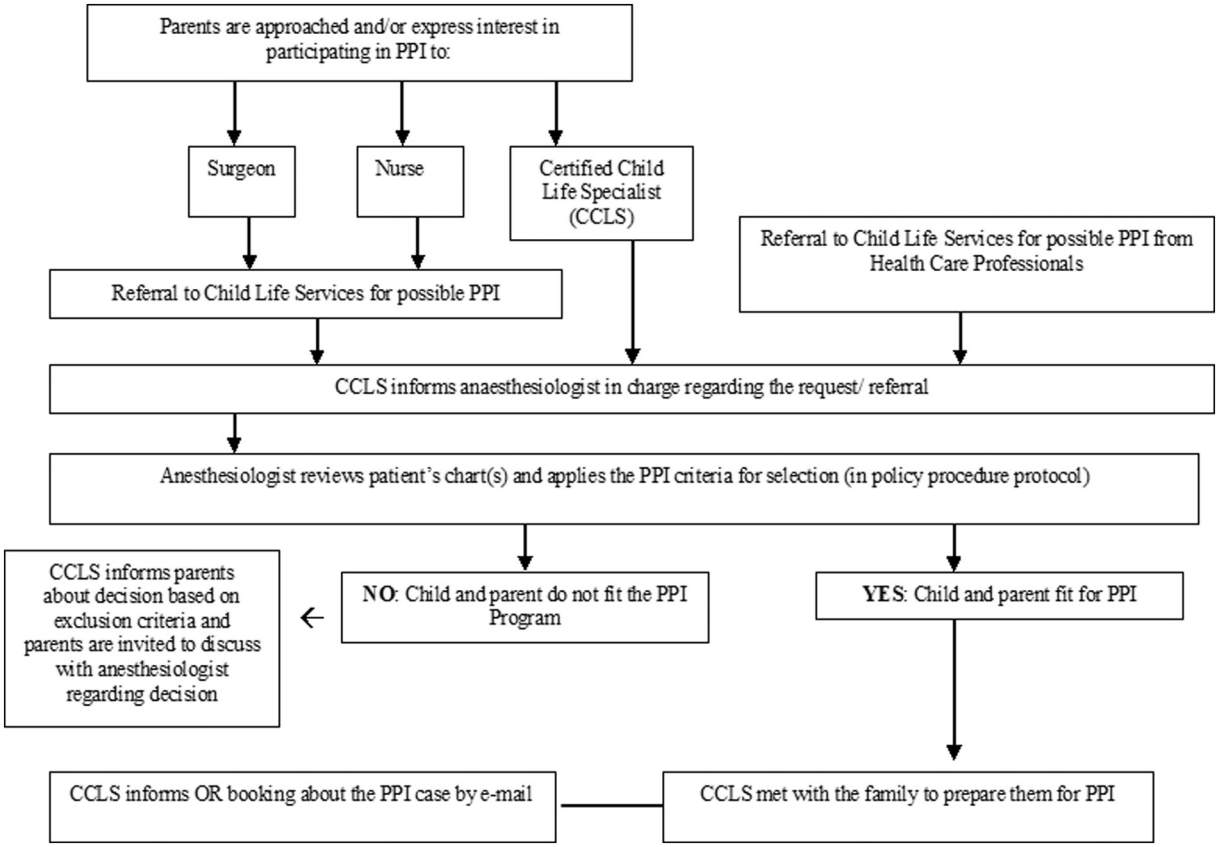

Fig. 1. PPI algorithm for patients and families.

also not evidence-based. We conducted the present study to evaluate the perceptions of a pediatric surgical department regarding PPI before and after establishment of the program.

1. Methods

1.1. Parental presence at induction of anesthesia program

The PPI program was instituted at the Montreal Children's Hospital in February 2011, following significant advocacy from parents and child life therapists, as well as a surgeon who had experienced the program at another children's hospital. The hospital is an academic, tertiary, free-standing children's hospital with six operating rooms. The program was started as a pilot program and gradually upgraded to a full perioperative service. During the first year (pilot phase), PPI was employed for 43 patients. These numbers progressively increased. From April 1, 2016 to March 31, 2017 a total of 5389 invasive procedures were done at our institution, 1164 of which had PPI (22%). Procedures utilizing PPI included both medical (cardiology, gastroenterology, respirology, hematology and oncology, neurology) and surgical (neurosurgery, maxillofacial surgery, general and thoracic surgery, ophthalmology, orthopedics, otolaryngology, cardiac surgery, plastic surgery, urology). PPI was most often requested by otolaryngology (369 cases; 32%) and general and thoracic surgery (213 cases; 18%). The PPI program involves multi-disciplinary coordination of nursing, certified child life specialist (CCLS), surgeons, and anesthesiologists. There is only one CCLS participating in the program. The program is available mostly to outpatients or patients admitted on the same day of surgery, since the parents of inpatients (who often undergo operations after presenting to the emergency department or shortly after admission) typically do not have the chance to undergo the necessary preparation. However, our hospital is currently looking into mechanisms that will allow extension of the program to inpatients as well. A policy and procedures PPI manual contains inclusion and exclusion criteria for PPI. This is an inter-professional protocol posted on the hospital's intranet (Appendix).

An algorithm is used to determine which families are offered PPI (Fig. 1). The algorithm addresses the management of parental anxiety by preparing the parent for the procedure during meetings prior to the surgery (Appendix). Parent education forms the core of the PPI program. The child life specialist counsels the anxious parent and explains to them that the calmest parent is the ideal candidate to accompany their child into the OR for induction. A calm parent equals a calmer child. Prior medical experiences of the child and the parent are reviewed, the parents watch the PPI educational video, and an educational session is completed which emphasizes the following:

1. Dress code: bunny suit, hat, shoe covers and mask.
2. No touching anything in the OR. Only your child and the OR bed.
3. Coping plan: What helps your child, interests of the child, comforting items, importance of focusing on child when in the OR (you will have an opportunity to ask questions before going into the OR and after)
4. The excitement phase: rolling and or blinking of the eyes, involuntary movements. Changes in breathing are all normal and expected reactions to anesthesia induction. Staff may need to hold child for everyone's safety. Emphasize child will go limp.
5. Exiting the OR when anesthesiologist requests it.

No complications of PPI ensued since the establishment of the program. There have been no incidents that prompted any evaluation of program safety or effectiveness.

1.2. Pre-PPI survey

Prior to the introduction of PPI, an internal survey was administered to all full-time and part time members of the hospital's department

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