Journal of Radiology Nursing 36 (2017) 44–50

Contents lists available at ScienceDirect

Journal of Radiology Nursing

journal homepage: www.radiologynursing.org

Helping Children Cope With Medical Tests and Interventions

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Keywords:
Sedation
Communication
Self-hypnotic relaxation
Anesthesia
Pediatric interventions

A B S T R A C T

Medical procedures and tests become a challenge when anxiety and pain make it difficult for the patient to cooperate or remain still when needed. Fortunately, a short intervention with hypnoidal language at the onset of a procedure induces a positive and sustained change in the way pain and anxiety are processed. Although anesthesia may appear to be a simple solution to eliminate pain, the adverse effects of preanesthesia anxiety on postoperative behavior and recovery are often not fully appreciated. This article discusses options for self-hypnotic relaxation that are applicable to interactions with children. The high suggestibility of children makes it relatively easy to engage them in make-believe scenarios. Avoidance of negative suggestions is key in avoiding nocebo effects that may be difficult to overcome later. Once a child is immersed in his or her preferred scenario or hobby/activity of choice, environmental and procedural stimuli can be easily integrated in the imagery. Ego-strengthening metaphors that tie in features of strength, confidence, or resilience are particularly empowering. Even when children are fully under general anesthesia, they may still have recall of what is said in the room, and therefore, caution in word choice should be maintained.

Introduction

Medical procedures and tests become a challenge when anxiety and pain make it difficult for the patient to cooperate or remain still when needed. This is even truer for children. Moving right away toward general anesthesia or deep sedation seems an easy path toward having a child lie still and not having to deal with the child's emotions while the case is ongoing. The adverse effects of anticipatory anxiety involved with induction of anesthesia, however, are not always fully appreciated (Kain et al., 1997). Nonpharmacologic alternatives become attractive as they can reduce or even eliminate the need for pharmacologic sedation and can aid in improving the perianesthesia experience. Whichever route is chosen, nursing is at the forefront of managing the children's distress. It may be while placing intravenous (IV) cannula or assisting their patients through the procedures or in preparation for induction of general anesthesia.

When treating children, there are more parties to take into account. One not only has to take care of the child but also of the accompanying parent(s) or caregiver(s) whose emotional engagement and parenting style may interfere with the child's ability to use his or her innate coping mechanisms. This article addresses the challenges and implications of the setting, and how they can be overcome through targeted use of comforting suggestions and guidance in self-hypnotic relaxation.

The setting

Distress in the Waiting and Preparation Rooms

Presenting to the radiology department is commonly associated with high stress levels and perceived impact on daily life (Flory & Lang, 2011). Uncertainty about diagnosis can elicit even greater stresses than those associated with anticipation of risky invasive therapeutic procedures (Flory & Lang, 2011). Preoperative fear and anxiety are common before surgery or medical procedures (Karanci & Dirik, 2003; Rosen, Svensson, & Nilsson, 2008) and may have far-reaching consequences. Besides direct effects on the immune system, anxiety lowers pain thresholds and facilitates overestimation of pain intensity, which results in increased postoperative pain (Colloca & Benedetti, 2007). This weakens the immune function even more and may have consequences such as

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http://dx.doi.org/10.1016/j.jradnu.2016.11.005
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delayed wound healing (Broadbent & Koschwanez, 2012) and development and progression of cancer (Webster Marketon & Glaser, 2008). To reduce preoperative anxiety and stress, anxiolytics may be prescribed although preoperative use of this medication is an independent risk factor for major morbidity and mortality after surgery (Ward et al., 2015).

Time spent waiting in the preparation room before being transferred to the operating theater is experienced as one of the most frightening events in the perioperative period and should be kept as short as possible (McCleane & Cooper, 1990). The sight of technical equipment was the physical environmental factor that most increased anxiety in the intraoperative period. Seeing surgical instruments also contributed but to a lesser degree (Haugen et al., 2009).

The anesthesia provider-patient relationship (rapport) during the preanesthetic visit has a beneficial anxiolytic effect, and the preoperative discussion and reassurances measurably reduces postoperative pain (Egbert & Jackson, 2013). Therefore, the question may be raised why pharmacologic sedation is used, when an otherwise adequate anesthetic (in form of nerve blocks or intrathecal anesthesia) is used and/or simple conversation with the anesthesia provider or nurse might have a therapeutic effect (Schulz-Stubner, 2015).

Preoperative Anxiety in Children Undergoing General Anesthesia

Distress related to the induction of general anesthesia in children is well documented in the literature (Kain et al., 1997; Varughese, Nick, Gunter, Wang, & Kurth, 2008; Yip, Middleton, Cyna, & Carlyle, 2009). Furthermore, high preoperative anxiety surrounding this event is a predictor of postoperative pain, prolonged recovery, and postoperative maladaptive behavior such as nightmares, separation anxiety, eating problems, and increased fear of doctors (Johnston, 1986; Kain, Mayes, O'Connor, & Cicchetti, 1996; Kain, Ming Wang, Mayes, Caramico, & Hofstadter, 1999; Vernon, Schulman, & Foley, 1996). After surgical intervention, even post-traumatic stress disorder may develop (Aaron, Fadale, Harrington, & Born, 2011; Favaro et al., 2011).

A Cochrane collaboration review analyzed 17 trials of nonpharmacologic interventions for assisting the induction of anesthesia in children in efforts to minimize induction distress and subsequent effects (Yip et al., 2009). The trials included 1,796 children, their parents, or both.

Evaluation of parental presence at anesthesia induction in eight trials examined failed to show significant differences in anxiety or co-operation of the children during induction except for one trial, which showed that parental presence was significantly less effective than the use of midazolam in reducing children's anxiety.

The review identified six trials with interventions for children. Use of a computer program before induction yielded better cooperation than having parents present (one trial; Campell, Hosey, & McHugh, 2005). One trial examined the impact of using video games with significant positive effect on anxiety compared with no intervention or premedication (Patel et al., 2006). In another, clown doctors were found to reduce children's anxiety more successfully than no intervention (Vagnoli, Caprilli, & Messeri, 2010). Hypnosis was associated with a nonsignificant trend toward reduced anxiety during induction compared with midazolam (Campell et al., 2005). A low sensory environment improved children's co-operation at induction (Kain, Wang, Mayes, Krivutza, & Teague, 2001). Music therapy was unsuccessful in reducing children's anxiety (Kain et al., 2004).

Interventions for parents had mixed outcomes. When parents received acupuncture, in one study, to decrease their own anxiety levels, their children were less anxious during induction as compared with children whose parents had received sham acupuncture (Wang, Maranets, Weinberg, Caldwell-Andrews, & Kain, 2004). When a video was viewed preoperatively, neither child nor parent had shown a benefit (McEwen, Moorthy, Quantock, Rose, & Kavanagh, 2007; Zuwala & Barber, 2001).

The conclusion drawn from the Cochrane review was that parental presence at the time of induction of anesthesia does not influence the amount of anxiety experienced by the child; however, the other nonpharmacologic interventions were helpful in reducing anxiety but need further study. The limitations of the review were the lack of a consistent tool to measure anxiety and outcomes, a clear distinction was not drawn between the use of preoperative sedation versus a nonpharmacologic intervention to reduce anxiety, and none of the studies assessed outcomes after the child had returned home after the procedure.

There is strong evidence supporting the use of preoperative sedation to relieve induction anxiety in younger children (McEwen et al., 2007; Zuwala & Barber, 2001) However, midazolam, the usual drug of choice at this institution, takes 20 to 30 min for peak effect, which sometimes delays the procedure. It has also been associated with emergence delirium in younger children and has not been consistently associated with improved postoperative behavior (McEwen et al., 2007; Zuwala & Barber, 2001).

The mask anesthesia induction experience, with the pungent vapor, force often applied to restrain the child, and ineffective fight or involuntary submission that is required, can be very stressful to the child.

The Power of Suggestions

Simply entering a hospital or medical facility places a patient in a trance-like focused state, making him or her acutely sensitive to any suggestion, good or bad. Unfortunately, in the ambiguous case of what a health care professional or environmental stimulus may mean, human nature is geared to choose the more negative interpretation (Murphy & Zajonc, 1993). Throughout evolution, individuals who assumed the worst and took standard precautions likely fared better in their survival in the wild than those more nonchalant (Ewin & Eimer, 2006). Unfortunately, the same is not true in the medical setting where negative expectations can become reality ranging from the experiencing of pain to even death (Bayer, Coverdale, Chiang, & Bangs, 1998; Voelker, 1996).

There is the risk of misinterpretation of statements. For example, the possible remark of an anesthesia provider, “I am going to give you an IV,” can be understood as ivy, or poison ivy, and confuse or frighten the child. “I am going to put this mask over your face” can be misinterpreted to mean, “He is going to suffocate me!!” Adults may actually be more prone to misunderstanding than younger children who do tend to take things more literally rather than seeking second meanings. Children also have a limited vocabulary, which they use for understanding and positioning a statement. Even an introduction such as, “I am the sleep doctor” may confuse the child. Will he cure sleep? Does he sleep a lot? The health care professional thus has the enormous power to shape a patient's perception and even outcomes merely by intentionally or unintentionally using certain words.

The effect of pills, real and placebo, is another testament to the power of the mind in producing reality (Barsky, Saintfort, Rogers, & Borus, 2002; Cocco, 2009). The meaning of placebo effects is widely known, whereas its counterpart, nocebo effects, is less acknowledged. One of the classical studies nicely demonstrating a nocebo effect involved investigating whether exposure to radio frequency fields from mobile phones may cause head pain or discomfort (Oftedal, Straume, Johnsson, & Stovner, 2007). All study subjects were informed about the possibility that head pain could be