Effects of Therapeutic Suggestion Under Anesthesia on Outcomes in Children Post Tonsillectomy

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Introduction: *Tonsillectomy causes discomfort in children. Positive therapeutic suggestions (TS) may be given to patients while they are emerging from general anesthesia as a potential tool to decrease distress.*
Purpose: *This study examined impact of TS on outcomes, when delivered to children emerging from general anesthesia post tonsillectomy.*
Design: *A double blinded randomized controlled trial was conducted with 94 patient/parent pairs.*
Methods: *TS and noise recordings were played via headphones post tonsillectomy upon arrival to the Post Anesthesia Care Unit until the child showed signs of waking.*
Findings: *Pain scores at 30 minutes post extubation show significantly lower pain in the TS group,* P = *.04 (Mann Whitney U for independent samples). The TS group had 70% increased likelihood of receiving less intravenous (IV) opioid.*
Conclusion: *TS may help lower pain in children post tonsillectomy and decrease demand for IV opioid pain management in the 4- to 8-year-old tonsillectomy population.*

Keywords: *therapeutic suggestion, tonsillectomy, pain, pediatrics, PACU.*

TONSILLECTOMY IS ONE OF THE MOST common pediatric surgical procedures, with more than 583,000 performed each year in the United States.[1] This procedure causes stress and discomfort in children, who frequently experience pain, nausea, vomiting, and emergence delirium during postanesthesia care. Children's individual stress responses may affect how they feel after surgery. Length of stay (LOS) in the postanesthesia care unit (PACU) may be prolonged and the healing process may be slowed in stressed children.[2] Anecdotal evidence suggests that children exposed to therapeutic suggestion (TS) consisting of gently encouraging, positive words spoken to them during emergence from anesthesia seem to arouse after surgery with less agitation, less pain, and lower requirements for pain medications. TS has been associated with positive results in some adults during surgery,[3,4] but it is unknown how TS affects children.

Purpose

The purpose of this study was to determine the effect of positive TS delivered during emergence

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Conflict of interest: None to report.

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from anesthesia on clinical outcomes of children posttonsillectomy. We hypothesized that preschool and school-age children who hear positive suggestions in the immediate postoperative period after adenotonsillectomy or tonsillectomy would demonstrate significantly decreased LOS in the PACU compared to children who hear normal sounds of the PACU. Furthermore, we hypothesized that post tonsillectomy, preschool and school-aged patients exposed to TS would (1) demonstrate less nausea and vomiting (N&V) than control patients as evidenced by nurse interventions for nausea, (2) require fewer interventions for pain compared to controls, (3) have lower pain scores compared to controls, (4) experience lower scores of emergence delirium in the PACU compared to controls, (5) recover more quickly from emergence delirium or experience fewer episodes as a group than controls, and (6) exhibit implicit memory of what they heard during TS.

Review of Literature

There is an increasing body of evidence suggesting that the patient retains a state of awareness and the ability to hear and learn during anesthesia.[5-7] Regardless of whether there is memory of what occurred while under anesthesia, the patients may respond physiologically to what they are hearing.[8] In children, this effect may be heightened, because awareness under anesthesia is said to occur eight times more often in children than in adults.[9] Seminal studies with adults demonstrate positive effects of TS on postoperative outcomes.[4,5] Other studies do not replicate this phenomenon.[10,11] Some problems with these studies include use of small sample sizes that limit the power to detect effects and the use of negatively worded TS that highlight the undesired outcome, for example, "you will not feel pain or nausea."[12]

Positively worded TS interventions avoid the mention of negative outcomes such as pain or nausea. Suggestions of desired feelings, such as "you will feel comfortable," are used instead. A search of Medline and CINAHL revealed only one small study on the effects of TS on children during surgery for tonsillectomy.[13] Research specifically targeting TS on children under anesthesia is in its infancy. Fortier and colleagues[13] addressed TS under anesthesia during tonsillectomy. The intervention, provided when the child was deeply under anesthesia, looked only at the specific outcome of N&V. The study found no significant difference in the frequency of N&V between children exposed to TS and those not exposed. The study had a small sample size (67 patient-parent pairs), which may have affected the power. Also, the intervention was not specifically targeted for delivery during emergence from anesthesia. There have been no prior published studies looking at the question of TS delivered to children after tonsillectomy, during emergence from general anesthesia, on the specific outcomes proposed by this study: implicit memory recall, LOS, pain, nausea, and emergence delirium. The possibility exists that TS would be more effective if delivered during emergence from general anesthesia as the patient progresses from the physiological stage III up to stage I.[14]

Outcomes achieved by other similar nonpharmacologic or biobehavioral interventions also lend support to the use of TS. Guided imagery, music therapy, command coping statements, and hypnosis all promote positive coping outcomes for children during medical procedures.[15-19]

Theory/Conceptual Framework

TS Mechanism of Action

TS is a biobehavioral treatment similar to hypnosis. As with hypnosis, suggestions are delivered to a person in an altered state of consciousness. The critical difference between TS and hypnosis in this study is that TS suggestions are delivered *under anesthesia* to propose a good response to treatment and a decrease in the body's stress response. Response to TS is said to be affected by a person's suggestibility. Research shows that hypnotic suggestibility is highest in childhood.[20,21] Knowledge of increased hypnotic suggestibility in children adds credence to the belief that TS can be used to decrease the stress responses in a child.

Current research promotes the idea that cognitive processing involved in biobehavioral interventions may serve as a type of neuromodulator that blocks perceptions of pain or distract the patient from discomfort.[22,23] Thus, biobehavioral interventions