KJA
Korean Journal of Anesthesiology

Letter to the Editor
pISSN 2005-6419 • eISSN 2005-7563

Smartphones in the operating theatre: a vice may be a boon

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Pre-operative anxiety (POA) is a state characterized by apprehension and fear arising from the anticipation of a surgical event. The incidence of POA ranges from 11% to 80% and is higher among children than among adults [1]. This leads to a variety of physiological and psychological responses such as tachycardia, hypertension, and autonomic fluctuations such as elevated temperature and excessive sweating, along with increased aggression and a refusal to move away from their parents in the preoperative area [2]. The resultant peripheral vasoconstriction leads to difficult venous access and increases anesthetic requirements [2]. Unlike adults, where counselling and appropriate education regarding the expected in the perioperative period helps in reducing anxiety, children often pose a challenge to the anesthetist. The various scales to measure perioperative anxiety include the Modified Yale Preoperative Anxiety Scale, the Hospital Anxiety And Depression Scale, the State-Trait Anxiety Inventory, and the Visual Analog Scale [2,3]. These tools allow an approximate measure of the anxiety the patient is feeling at that time.

A 10 year-old boy with a compound fracture of the tibia was scheduled for an emergent external fixator application in a tertiary medical institute in eastern India. The child was apprehensive, had been firmly holding onto the hand of his mother, and had been refusing to be transferred to the operating theatre. The patient was already cannulated in the ward by the nurse and she had also noted the extreme restlessness of the child during the intravenous cannulation process. The Modified Yale Preoperative Anxiety Scale (mYPAS) [3] was used to score the child's anxiety level and it was found to be 20. Intravenous (IV) glycopyrrolate (0.005 mg/kg), and IV midazolam (0.05 mg/kg) followed by intravenous ketamine (0.5 mg/kg) were administered and the child was transferred to the operating theatre. Once the child was motionless, monitors were attached and after ensuring a patent airway and normal vitals, the patient was administered spinal anesthesia using 1.8 ml of 0.5% hyperbaric bupivacaine, with the patient in the left lateral flexed position and an assistant helping to maintain the position. After the effects of spinal anesthesia were confirmed, the surgery was started. After 10 minutes, the sedatives had worn off and the child became anxious and restless again. A repeat dose of midazolam (0.05 mg/kg) did not improve the situation. After he was provided with a cell phone to watch cartoons, the child became happy and cheerful and remained so while the surgery proceeded (Fig. 1). In the meantime, an infusion of dexmedetomidine started and the child drifted off to sleep gradually. The cell phone removed and the surgery was completed uneventfully. The patient then transferred to the postoperative ward.

In our case, a smartphone was used intraoperatively to allay the anxiety of a child prior to the onset of action of dexmedetomidine after which the child very quietly drifted off to sleep. As there was parental separation and the child was exposed to an alien environment, his anxiety levels were very high in the operating theatre. Though there are many anxiety scales for preoperative settings, there is no mention in the literature about intraoperative anxiety scoring; thus, we used the mYPAS scoring. The risk factors are obviously higher in patients with no previous anesthesia experience and for general anesthesia as compared to regional anaesthesia; yet children always behave in a different manner when compared to adults, and their anxiety remains significantly higher, with fewer reported studies. Anxiety in perioperative settings can cause a multitude of complica-

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Received: August 5, 2018.
Revised: September 10, 2018.
Accepted: October 10, 2018.

Korean J Anesthesiol 2019 June 72(3): 283-284
https://doi.org/10.4097/kja.d.18.00220

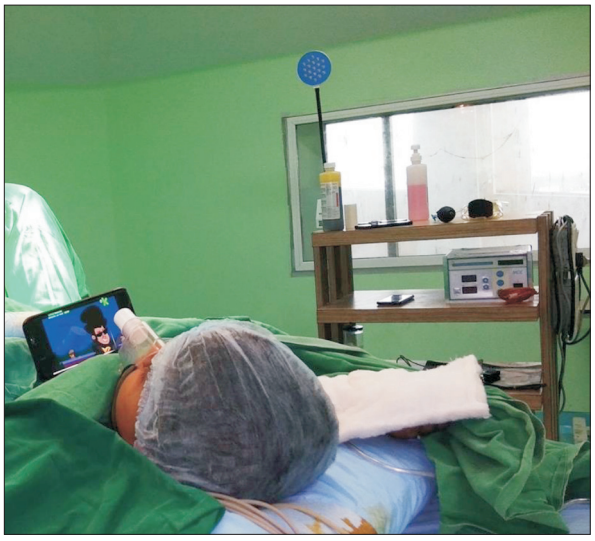

Fig. 1. A calm child watching his favorite cartoon in smartphone while the surgery is ongoing.

tions. Of note are post-hospitalization behaviour changes which can manifest as separation anxiety, sleep disturbances, eating disturbances, and aggression [4]. The smartphone is the latest addiction in all age groups and particularly in children. The use of smartphones in the operating theatre has been shown to have several drawbacks such as an increased risk of infection for patients, being a distraction for the anesthetist, and even interfering with the workings of the anesthetic equipment [5]. Hence, most operating theatres have banned the use of the cell phone if they do not follow the simple "one-meter rule" [5]. Nevertheless, the anesthetist has a greater role to play in allaying anxiety of the child in both preoperative and intraoperative settings and in this particular case, the smartphone helped to alleviate the child's anxiety.

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

Author Contributions

Bhavna Sriramka (Conceptualization; Writing – original draft; Writing – review & editing)
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