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Evaluating the effects of general anesthesia on sleep in children undergoing elective surgery: an observational case–control study

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Abstract

Study Objectives

Previous research has suggested that general anesthetics can disturb postoperative sleep patterns by affecting the sleep–wake cycle. The objective was to identify the effects of general anesthetics on sleep quality and related behavioral changes in children.

Methods

This was a prospective, observational case–control study with children, aged 18 months to 8 years, undergoing general anesthesia for elective surgery. Participants wore an actigraph for 7 days on three occasions: prior to surgery, the immediate postoperative period, and 3 months after surgery. Data regarding behavior patterns were collected using behavioral assessments at baseline, the first postoperative week, and 3 months following surgery.

Results

Thirty-one participants (mean age 4.8 ± 2.0 years, 81% male) underwent urologic or otolaryngologic surgery. The median (interquartile range) anesthetic duration was 132.0 (80.0–184.0) min. No significant differences were found in sleep efficiency, total sleep time, wake time after sleep onset, or sleep onset latency between baseline, 7 day postoperative period, and the 3 month follow-up. No significant differences were found in sleep-related behavioral metrics including internalizing and externalizing behaviors, and executive functioning. Data were compared with a control group of 18 participants (mean age 5.3 ± 1.8 years, 61% male). No significant differences were found in sleep patterns and related behavioral metrics between both groups.

Conclusions

In this study, general anesthesia did not result in disturbed sleep or associated negative behavioral changes in otherwise healthy children undergoing elective surgeries of low complexity. Physicians can advise parents that a child's surgery and associated general anesthetic exposure may not result in significant changes in postoperative sleep patterns.

general anesthesia, sleep disturbances, actigraphy, pediatrics

Topic:

anesthesia, general

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child

follow-up

parent

sleep disorders

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sleep

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