Use of RRa Sensor in a Pediatric Patient with Post-Adenotonsillectomy

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Abstract

Rad-87 and RRa are new acoustic monitoring devices which can monitor the respiratory rate. To our knowledge, no studies have reported the RRa sensor used in pediatric patients after surgery. We succeeded in measuring the respiratory rate with the RRa sensor in the Pediatric Intensive Care Unit(PICU).

A 10-year-old boy, 14.5 kg in weight and 119.6 cm in height, with cerebral palsy, mental retardation, epilepsy, and obstructive sleep apnea due to adenoidal and tonsillar hypertrophy, was scheduled for adenotonsillectomy under general anesthesia. Anesthesia was maintained with oxygen, air, sevoflurane (1.5-2.0%), remifentanil (0.1 to 0.5 microg . kg-1. min-1), and fentanyl (4 microg . kg-1). The operating time was 55 minutes, and the duration of anesthesia was 133 minutes.

After finishing the surgery, we attached the RRa sensor to his anterior neck and monitored his respiratory rate. Furthermore, RRa could count his respiratory rate, during transfer from the operating room to PICU. The patient was sedated with dexmedetomidine (0.28 microg . kg-1 . min-1) at PICU, and his respiratory rate was accurately measured with the RRa sensor.

We hope that Rad-87 and RRa sensors will become useful for measuring the respiratory rate in pediatric patients in the future.