

The effect of heat-moisture exchanger and closed-circuit technique on airway climate during desflurane anesthesia.

沈杏娟

Lee WR;Shen SC;Wang KH;Hu CH;Fang JY*

Abstract

PURPOSE: We assessed whether closed-circuit anesthesia (CCA) could provide a more favorable airway climate than semi-closed anesthesia (SCA), and we also determined the beneficial effect of heat moisture exchangers (HMEs) on the preservation of airway climate during desflurane anesthesia. **METHODS:** Forty patients scheduled for colorectal surgery (n = 10 for each group) were randomized to receive a fresh gas flow of 250 or 3000 ml.min⁻¹ with or without HMEs. Anesthesia was maintained by adjusting the inspired concentration of 6% desflurane. Absolute moisture and temperature of inspired gases were measured as the baseline value first at 5 min after tracheal intubation, and then at 10, 20, 45, 60, 90, and 120 min after the induction of anesthesia. **RESULTS:** At 120 min, the inspiratory humidity and temperature were higher in CCA than in SCA. The HME led to major improvements of the humidity (from 22.1 to 35.7 mg H₂O.l⁻¹) and temperature (from 23.6 degrees C to 31.5 degrees C) of anesthetic gases in the CCA group. **CONCLUSION:** CCA was much more advantageous than SCA for maintaining the patient's airway climate during the 2-h study. The beneficial effect of HME on the airway climate should be emphasized, especially in patients undergoing general anesthesia.